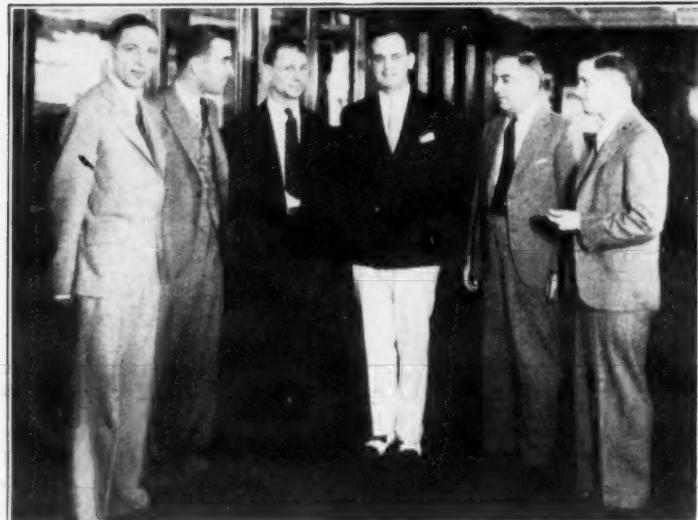


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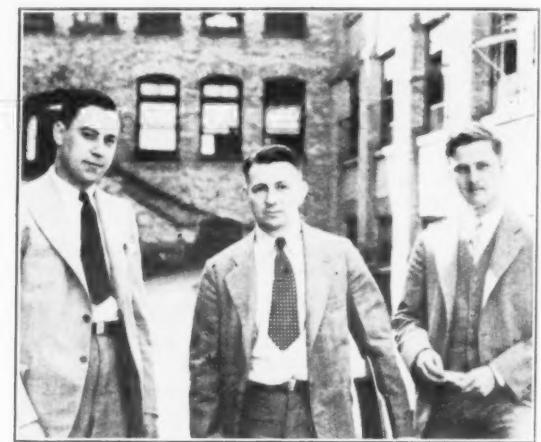
### New Unit, Water Cooler Announced



C. J. Gibson (left), president of Gibson, seems pleased with what L. V. Whitney (right), Chicago distributor, is saying. The other two are Harold DeRoque, Whitney organization, and Louis Hamper.



Convention delegates pose for a photograph with the new Gibson SG-54 and the new Gibson water cooler, announced at the meeting.



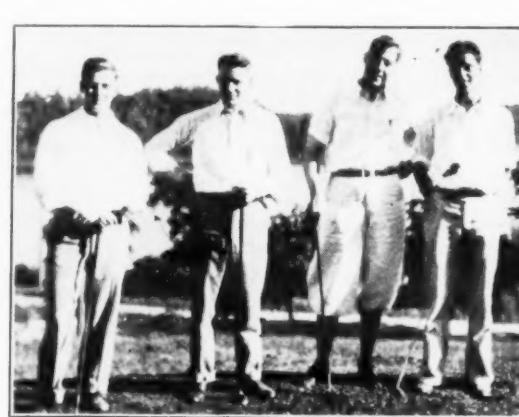
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# Merchandising Section

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Registered U. S. Patent Office

The business newspaper of the refrigeration industry

VOL. 6, NO. 47, SERIAL NO. 175  
ISSUED EVERY WEEK

Copyright, 1932, by  
Business News Pub. Co.

DETROIT, MICHIGAN, JULY 27, 1932

Entered as second-class matter  
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IN TWO PARTS  
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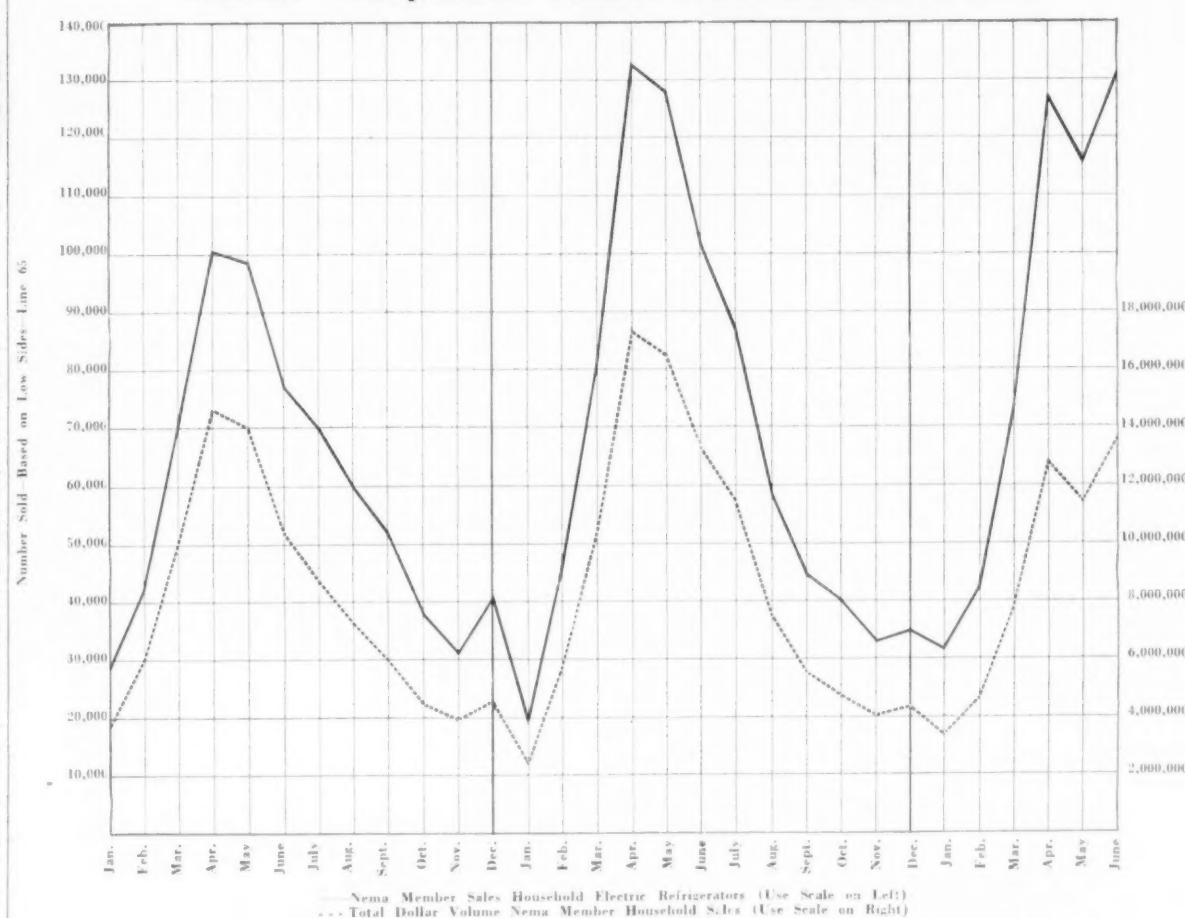
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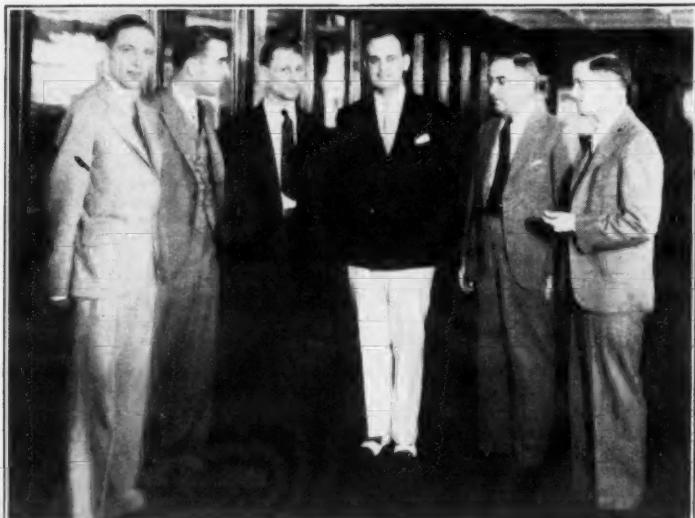
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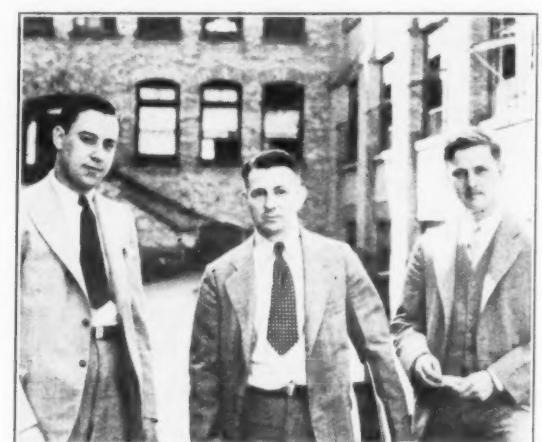
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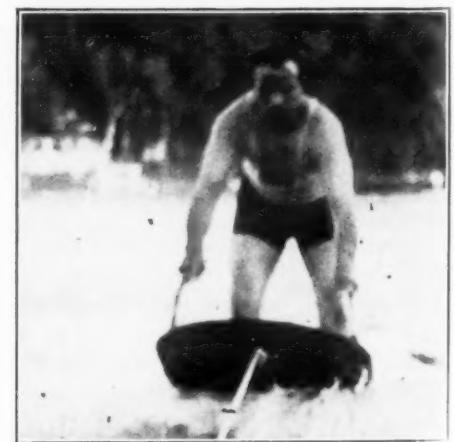
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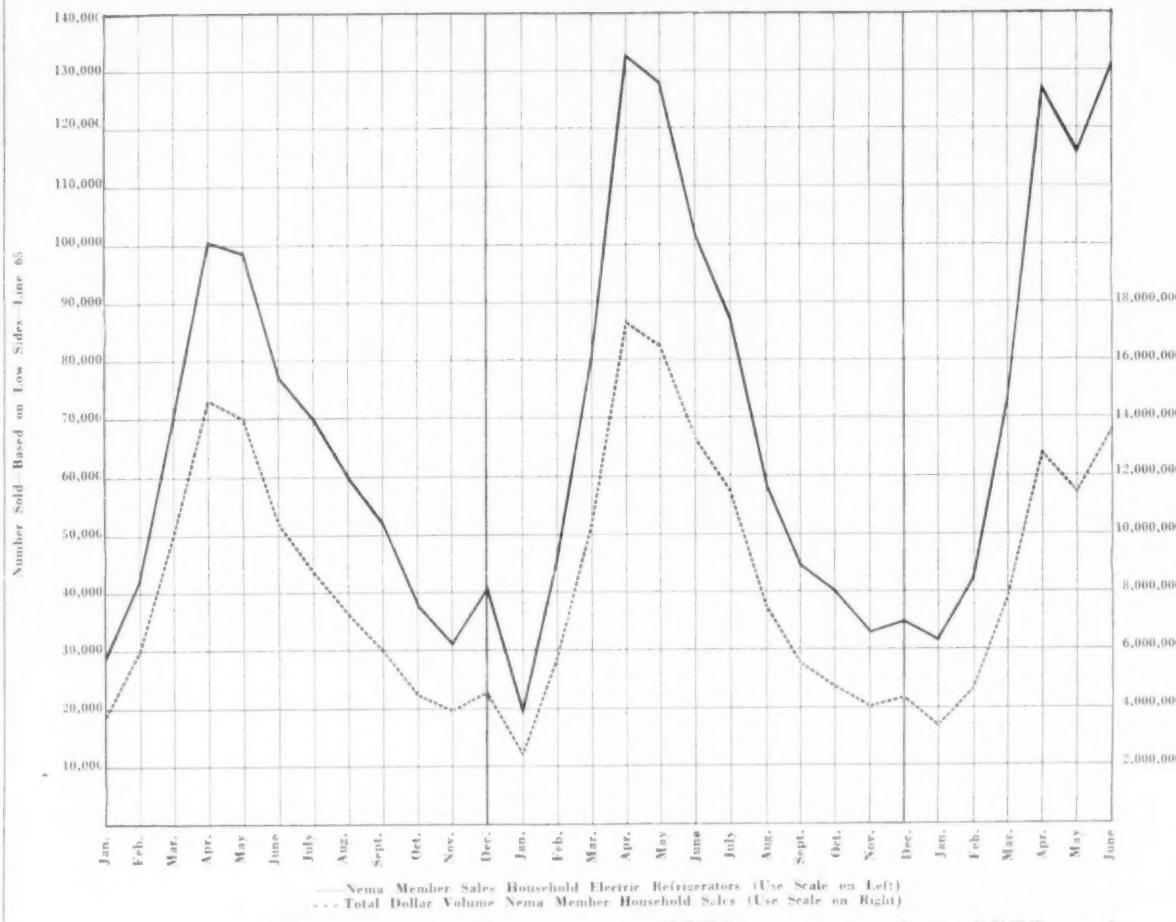
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# Nema Sales of Household Systems and Cabinets for June 1932, Reported By Sizes and Price Classes

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IN FIRST SIX MONTHS

Reported by Refrigeration Division of National Electric Manufacturers Association. Member companies: Copeland, Frigidaire, General Electric, Kelvinator, Majestic, Norge, Servel, Trupar, Universal Cooler and Westinghouse.

## Household Cabinets With Systems

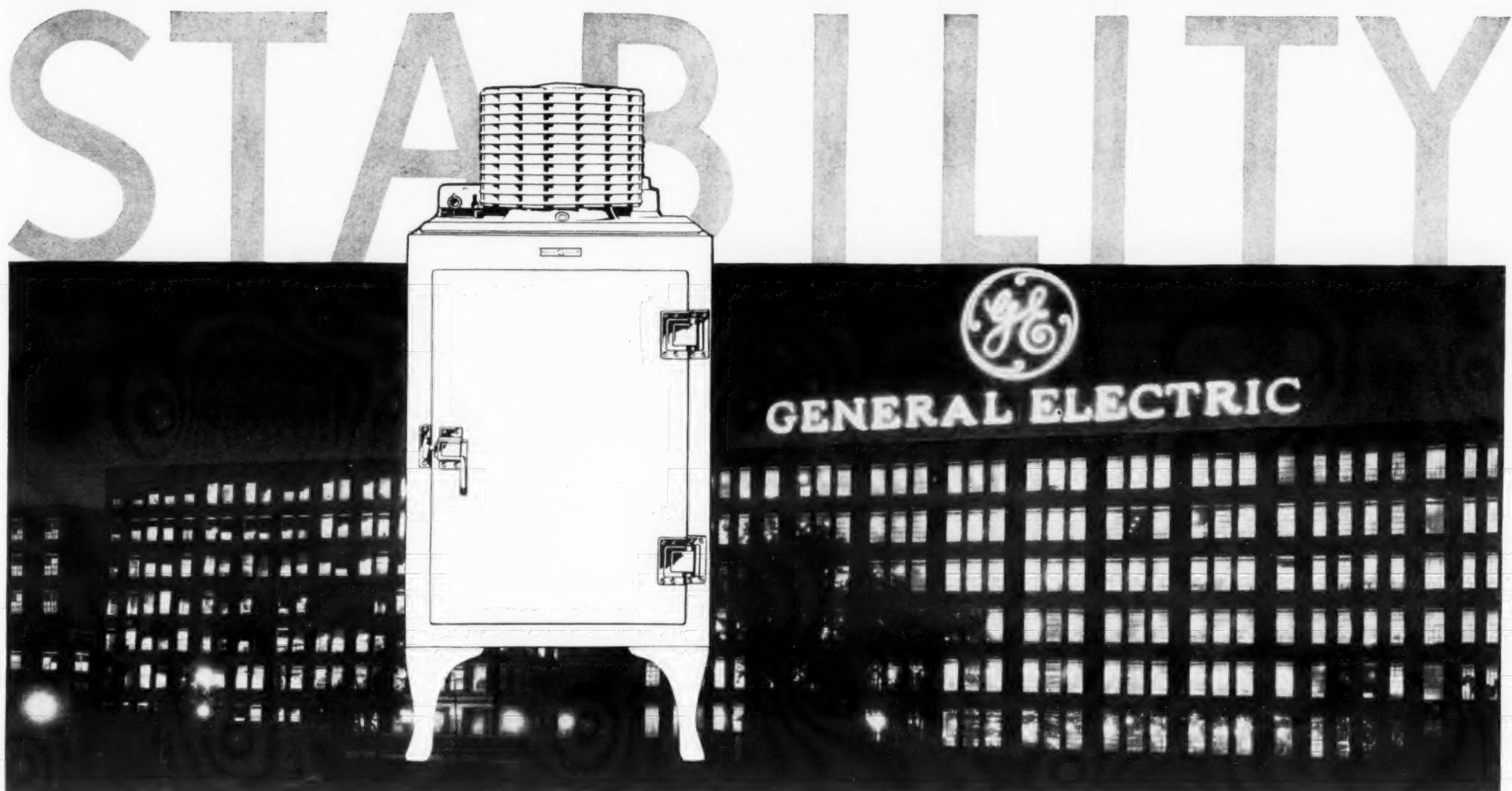
Using Factory or Branch Invoice Net Prices to Distributors and Dealers, Including Export.

Lowest Priced Cabinets Net Food Space		JUNE, 1932 Sales—As Billed to Distributors and Dealers				Stocks at End of June, 1932			
Quantity	Dollars	Quantity	Dollars	Quantity	Dollars	Quantity	Dollars	Quantity	Dollars
1. Under 4.00 cu. ft.	57,102.23	583	34,680.25	2,952	167,920.00				
2. 4 to 4.99 cu. ft.	1,059,402.25	6,145	424,762.91	8,828	613,099.61				
3. 5 to 5.99 cu. ft.	973,575.52	2,650	220,688.92	6,822	566,531.55				
4. 6 to 6.99 cu. ft.	315,139.12	3,075	282,609.75	3,675	339,257.75				
5. 7 to 7.99 cu. ft.	757,584.07	12,913	1,586,153.53	5,589	632,234.56				
6. 8 to 9.99 cu. ft.	761.00	3	647.00	75	19,741.00				
7. 10 to 12.99 cu. ft.	30,899.14	98	19,576.56	295	62,051.84				
8. 13 to 16.99 cu. ft.	6,876.00	321	78,831.00	192	46,932.00				
9. 17 to 24.00 cu. ft.	.....	1	313.00	14	4,389.00				
11. Totals if Systems Included	37,332	3,201,337.33	25,789	2,648,262.92	28,442	2,452,157.31			
Medium Priced Cabinets		JUNE, 1932 Sales—As Billed to Distributors and Dealers				Stocks at End of June, 1932			
Quantity	Dollars	Quantity	Dollars	Quantity	Dollars	Quantity	Dollars	Quantity	Dollars
21. Under 4.00 cu. ft.	119,587.67	3,018	252,225.92	1,566	129,579.75				
22. 4 to 4.99 cu. ft.	3,083,294.52	25,795	2,476,944.10	23,101	2,222,197.00				
23. 5 to 5.99 cu. ft.	721,166.63	1,899	196,936.73	4,569	475,176.00				
24. 6 to 6.99 cu. ft.	3,521,968.71	25,922	3,486,582.44	22,633	3,004,426.14				
25. 7 to 7.99 cu. ft.	267,275.00	749	108,402.00	1,143	164,134.00				
26. 8 to 9.99 cu. ft.	400,159.89	2,299	7,742	5,032	868,759.00				
27. 10 to 12.99 cu. ft.	164,003.75	734	1,294,032.50	2,260	503,455.00				
28. 13 to 16.99 cu. ft.	26,880.00	92	2,760	353	104,719.00				
29. 17 to 24.00 cu. ft.	23,544.00	63	608,308.00	416	145,178.00				
31. Totals if Systems Included	72,129	8,327,880.07	74,997	10,629,153.69	61,073	7,617,623.89			
Highest Priced Cabinets		JUNE, 1932 Sales—As Billed to Distributors and Dealers				Stocks at End of June, 1932			
Quantity	Dollars	Quantity	Dollars	Quantity	Dollars	Quantity	Dollars	Quantity	Dollars
41. Under 4.00 cu. ft.	88,049.00	1,937	220,847.00	1,086	120,327.00				
42. 4 to 4.99 cu. ft.	42,779.00	1,466	195,976.00	405	51,484.00				
43. 5 to 5.99 cu. ft.	.....	.....	.....	.....	.....				
44. 6 to 6.99 cu. ft.	20,542.80	115	19,848.00	.....	.....				
45. 7 to 7.99 cu. ft.	19,384.00	102	29,435.00	.....	.....				
46. 8 to 9.99 cu. ft.	1,278.00	4	4,917.00	.....	.....				
47. 10 to 12.99 cu. ft.	385.00	1	770.00	.....	.....				
48. 13 to 16.99 cu. ft.	476.00	1	952.00	.....	.....				
49. 17 to 24.00 cu. ft.	.....	.....	.....	.....	.....				
51. Totals if Systems Included	1,283	172,893.80	3,693	472,745.00	1,491	171,811.00			

## Household Cabinets Without Systems

Using Factory or Branch Invoice Net Prices to Distributors and Dealers, Including Export.

Lowest Priced Cabinets Net Food Space		JUNE, 1932 Sales—As Billed to Distributors and Dealers				Stocks at End of June, 1932			
Quantity	Dollars	Quantity	Dollars	Quantity	Dollars	Quantity	Dollars	Quantity	Dollars
1. Under 4.00 cu. ft.	406.00	26	6,548.00	14	233.00				
2. 4 to 4.99 cu. ft.	25,107.00	5,387	84,256.00	3,693	59,880.20	55	1,356.00		
3. 5 to 5.99 cu. ft.	54,706.00	3,086	77,211.00	2,203	55,510.00	15	646.00		
4. 6 to 6.99 cu. ft.	96,489.00	2,880	1,049	34,701.00	.....	.....	.....		
5. 7 to 7.99 cu. ft.	38,090.00	983	545	21,098.00	5	325.00			
6. 8 to 9.99 cu. ft.	.....	.....	1	90.00	4	270.00			
7. 10 to 12.99 cu. ft.	.....	.....	7	1,900.00	2	190.00			
8. 13 to 16.99 cu. ft.	.....	2	353.00	2	353.00	7	1,172.00		
9. 17 to 24.00 cu. ft.	.....	12,364	296,805.00	7,803	180,080.30	102	4,192.00		
Medium Priced Cabinets		JUNE, 1932 Sales—As Billed to Distributors and Dealers				Stocks at End of June, 1932			
Quantity	Dollars	Quantity	Dollars	Quantity	Dollars	Quantity	Dollars	Quantity	Dollars
21. Under 4.00 cu. ft.	1,262.00	39	1,534.00	14	436.00				
22. 4 to 4.99 cu. ft.	25,107.00	899	7,379	269,976.60	2	78.00			
23. 5 to 5.99 cu. ft.	54,706.00	1,095	5,377	268,593.80	3	150.00			
24. 6 to 6.99 cu. ft.	23,645.00	399	541	32,133.20	.....	.....	.....		
25. 7 to 7.99 cu. ft.	72,502.00	1,169	1,598	99,108.00	.....	.....	.....		
26. 8 to 9.99 cu. ft.	26,789.00	389	163	11,081.00	.....	.....	.....		
27. 10 to 12.99 cu. ft.	1,303.00	11	772	73,943.00	.....	.....	.....		
28. 13 to 16.99 cu. ft.	11,864.00	78	382	62,834.00	164	24,816.00			
29. 17 to 24.00 cu. ft.	2,817.00	15	29	3,343.00	.....	.....	.....		
30. Totals if Cabinets only	4,079	217,178.00	16,261	819,203.60	183	25,480.00			
Highest Priced Cabinets		JUNE, 1932 Sales—As Billed to Distributors and Dealers				Stocks at End of June, 1932			
Quantity	Dollars	Quantity	Dollars	Quantity	Dollars	Quantity	Dollars	Quantity	Dollars
41. Under 4.00 cu. ft.	11,417.00	171	109	7,278.00	.....	.....	.....		
42. 4 to 4.99 cu. ft.	4,647.00	56	43	3,569.00	.....	.....	.....		
43. 5 to 5.99 cu. ft.	.....	.....	.....	.....	.....	.....	.....		
44. 6 to 6.99 cu. ft.	11,417.00	171	109	7,278.00	.....	.....	.....		
45. 7 to 7.99 cu. ft.	4,647.00	56	43	3,569.00	.....	.....	.....		
46. 8 to 9.99 cu. ft.	.....	.....	.....	.....	.....	.....	.....		
47. 10 to 12.99 cu. ft.	6,456.00	56	29	3,343.00	.....	.....	.....		
48. 13 to 16.99 cu. ft									



*Designed, Built and Guaranteed by*

**THE GREATEST  
ELECTRICAL MANUFACTURING COMPANY  
IN THE WORLD**

**T**HE RETAILER of General Electric Refrigerators can face the future with confidence.

The General Electric Company is one of America's great industrial concerns. Its history is a vital part of the history of electricity itself. Five . . . ten . . . fifty years from now, the General Electric Company will be an even more vital influence in the economic life of the world than it has been during the past four

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And, the G-E Refrigerator stands as one of the General Electric Company's greatest engineering achievements. It incorporates exclusive features unmatched in the industry. Designed by some of the most brilliant minds in all electricity, the General Electric Refrigerator is built to give a life-time of faultless,

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Today, one out of every three domestic electric refrigerators in use is a General Electric.

General Electric Company, Electric Refrigeration Dept., Section DF 72, Hanna Building, Cleveland, Ohio.



**GENERAL ELECTRIC**  
ALL-STEEL REFRIGERATOR

## LITTLE STORIES OF INTERESTING PEOPLE IN THE REFRIGERATION INDUSTRY

## New York City

Undoubtedly the bluest, funkiest, most dolorous and pessimistic spot in the United States today is New York City.

When Middle Westerner goes East to the nation's financial capital he must gird himself with a fogproof suit of armor, or he will return to his native plains soaked through and through with the philosophy of defeatism.

He will hear stories of employees who borrowed thousands of dollars to buy stock in the company for which they were working, who purchased that stock at 50 or 100, and who now have seen it drop to 5 or 10, and who still owe the thousands they originally borrowed to buy it at that high figure.

He will hear tales of men by the scores who have taken a final desperate look at red-ink "balance" sheets, and then quietly gone up into an attic and hanged themselves. He will hear of families broken up, vows forgotten, children destitute.

It will seem to him, as it apparently does to many New Yorkers, that The World Is Coming to an End.

Notwithstanding this bottom-of-the-pit spirit in Manhattan, New York City is today by all odds the world's greatest market for electric refrigerators.

There are some manufacturers of considerable size in the industry who have shipped more than 50 per cent of their total production this year into the New York City territory. One concern declares that 70 per cent of its first quarter total was moved in New York.

According to N.E.M.A. figures published in the June 8 and July 6 issues of Electric Refrigeration News, 53,887 refrigerators made by the 10 Nema manufacturers were sold in the state of New York during March, April, and May. Nearest state was Pennsylvania, with 29,440; then came Illinois, with 21,989; and California, with 14,881.

New York state's May sales total of 22,181 was greater than the 16,601 total of the entire Great Lakes territory in the same month. This territory includes Illinois, Indiana, Michigan, and Wisconsin.

Under the aggressive leadership of Con Eakin, manager of the New York City Frigidaire branch, that operation has shown a remarkable increase in business this year.

It is said to be practically the only Frigidaire branch to show any increase at all, and is so far ahead of all other branches and distributorships in the Frigidaire organization that a contest wouldn't be much fun.

Rex Cole, of course, is still the kingpin of independent refrigerator distributors. A great many people do a helluva lot of worrying for Rex. They think he is overextended, that his organization is top-heavy, and that some of his leases are bound to cost him money.

What these people don't realize is just how much business Rex Cole (of course you know he distributes G. E. refrigerators) does. His annual sales volume is greater than the total production of all but a very few refrigeration manufacturers. Of course he has a large organization, and a long string of showrooms. He needs them.

Consolidated Gas Co. sells a heavy majority of all the Electrolux refrigerators sold. Niles Sellman of "Con Gas" is perhaps one of the largest merchandisers of refrigeration products in the nation. His brother, F. E., is vice president in charge of sales for both Electrolux and Servel.

Herb Brennan of World Utilities, Inc., continues to surprise Norge officials by the number of Rollator refrigerators he sells. Talk to a Norge executive, and you'll get the impression that nothing but Norges are going into the New York City territory. Herb sells so many that they just can't see how any more could be sold.

Mr. Brennan's organization and set-up is unique. He acts merely as a *sales agent* (with an organization) for Norge. He lines up dealers, shows them how to sell, helps them move refrigerators off their floors fast. Norge ships directly to these dealers, handles the billing and the collection and the servicing.

A separate Norge branch operation in New York City directs apartment house sales. M. G. O'Hara, Eastern sales manager for Norge, supervises all operations closely in that territory. Mr. O'Hara used to be vice president in charge of sales of the United States Rubber Co.

New life is noticeable in the Kelvinator

## THE EXPANSION VALVE

By George F. Taubeneck

## Joe Donovan and Alexander the Great

One of the busiest men in New York City today is Joe Donovan, who is manager of the recently organized air conditioning department of the General Electric Co.

Upon moving from Cleveland, where he had been manager of the apartment house sales division of the G. E. refrigeration department, to his new office in New York City, Joe found an enormous pile of work awaiting him. When he saw how much he had to learn and digest, his eyes bulged out so far that you could sit on one and saw the other off.

It was all new to Joe, of course. It would be new to anybody, for air con-

ditioning at the Key West aquarium, but Jake was adamant. The correspondent didn't really blame Ekaj much, for the creature in the bucket was actually laying ice cubes! Yes, sir! Colored ice cubes—rainbow colored ice cubes!

"Scarcely had Jake Ekaj set his sail on the postoffice floor when an ice cube of pinkish tinge floated to the surface of the water. Now a fish that can lay a pinkish ice cube out of whitish salt water is sure some fish—if the creature is a fish. Next came a blue cube! Cerulean blue. Then a white cube, and after that another pink one.

"Ay talla what," exclaimed Jake, "e've heem lay sa' more in dat colors we put heem ice blocks tagath' an' we make from heem one Amaracan flag! Yah?"

"The fish is square, brownish, almost tailless, but with brilliant dorsal and ventral fins. It was netted from about three feet, and Jake said he thought at first it was a 'trunk fish,' one of that well-known kind which packs its tail and fins inside itself when brought to the surface on a hook baited with craw meat.

"Scientists recently have discovered that every trunk-fish is accompanied by a blow-fish or pump-fish which acts as servant. The pump-fish forces air into the trunk when the latter gives the signal it wants to rise to the surface for a peek at the sunrise.

"If Jake Ekaj could propagate his refrigerating fish he believes he sees more money in it than in the rise in German 'marks' during the post-war days. Jake believes his pet has brothers and sisters in the same neck of the bay whence came this one, and that given time and pluck he'll not be long in putting the artificial ice makers out of the running."

## Ferguson Says So

H. M. Ferguson of the Republic Supply Corp., Michigan distributor for Norge, offers another story for our Tall Tales Dept. Mr. Ferguson doesn't want the name of the dealer in question to be printed, but we have it on file here in case any Doubting Thomas wants to check upon the veracity of this yarn.

It seems, according to Mr. Ferguson, that shortly before the sales tax came into effect, one of his outstate dealers rushed into Detroit, lashed a Norge in his Chevrolet truck and started home to deliver the refrigerator to a customer.

Coming up out of a slight valley at approximately 50 miles per hour, Mr. Dealer found, as he topped the brow of a slight incline, the sudden necessity of turning at a fork in the road.

As he made the turn, centrifugal force caused the heavy Norge to break its lashings, and the refrigerator went catapulting up the road for about 100 feet.

With visions of his investment gone, the dealer plodded over to where the Norge rested quietly on the highway, and found to his surprise that the wreckage was not great, although the door handle was sticking out through the crating.

Two passing truck drivers (for \$1 each) helped load the Norge back in the truck.

Home again, the dealer uncrated the refrigerator, started the compressor, and found that it worked perfectly. Next day, he delivered it to his customer's home, apologized for the condition of the door handle, and promised to replace it.

And Mr. Ferguson reports that the Norge is giving its buyer "complete satisfaction."

Next?

## Depression Yarn

So many electric refrigeration executives have called our attention to a little piece entitled, "I Like the Depression," written by Henry Ansley, newspaperman of Amarillo, Tex., that we think it is high time we reproduced it for everybody to read.

E. J. Martin, secretary of the National Food Distributor's Association, was first to give this story to us; and we have his permission to quote it in this column. Here 'tis:

"I like the depression. No more prosperity for me."

"I have had more fun since the depression started than I ever had in my life. I had forgotten how to live, what it meant to have real friends, what it was like to eat common every-day food. Fact is, I was getting just a little high hat."

"The creature seems to be a fish the twin of which never has been netted in these parts. Jake Ekaj wore a scared expression reminding one a good deal of his name (forward and backward). Bringing the fish to the postoffice and taking it away again, the look on Jake's face was just the same."

"Nowadays, as many *News-Globe* employees as are invited make those trips and they stay as long as they want to."

## LITTLE STORIES OF INTERESTING IDEAS IN THE REFRIGERATION INDUSTRY

The whole outfit could leave the office now and it wouldn't make any difference.

"I like the depression. I have time to visit my friends, to make new ones. Two years ago when I went to a neighboring town, I always stayed at the hotel. Now I go home with my friends, stay all night and enjoy home cooking. I have even spent the week-end with some of the boys who have been kind enough to invite me."

"It's great to drop into a store and feel that you can spend an hour or two or three or a half day just visiting and not feel that you are wasting valuable time. I like the depression."

"I am getting acquainted with my neighbors. In the last six months I have become acquainted with folks who have been living next door to me for three years. I am following the Biblical admonition, 'Love your neighbors.' One of my neighbors has one of the best looking wives I have ever seen. She is a dandy. I am getting acquainted with my neighbors and learning to love them."

"Three years ago, I ordered my clothes from a merchant tailor—two and three suits at a time. All my clothes were good ones. I was always dressed up. But now, I haven't bought a suit in two years. I am mighty proud of my Sunday-go-to-meeting clothes. When I dress up, I am dressed up and I don't mean maybe. I like the depression."

"Three years ago I was so busy and my wife was so busy that we didn't see much of each other, consequently we sort of lost interest in each other. I never went home to lunch. About twice a week I went home for dinner—at 6:30 o'clock. I never had time to go anywhere with her. If I did go on a party, I could never locate her; since there was always a "blonde" or a "red-head" available I didn't worry about it."

"My wife belonged to all the clubs in town. She even joined the young mother's club. We don't have any children, but she was studying—and between playing bridge and going to clubs, she was never at home."

"We got stuck up and hifalutin. We even took down the old family bed and bought a set of twin beds—on the installment plan."

"When I would come home at night, if my wife was at home, she would already be in her bed and I would crawl in mine. If she came in first, it was vice versa."

"We like the depression. We have come down off our pedestal and are really living at my house now. The twin beds are stored in the garage and the old family affair is being used. We are enjoying life. Instead of taking a hot-water bottle to bed these cold nights, she sticks her heels in my back just like she did before Hoover was elected."

"I haven't been out on a party in 18 months. I have lost my book of telephone numbers. My wife has dropped all the clubs. I believe we are falling in love all over again. I am pretty well satisfied with my wife. Think I will keep her, at least until she is 40 and then if I feel like I do now, I may trade her for two twenties."

"I am feeling better since the depression. I take more exercise. I walk to town and a lot of folks who used to drive Cadillacs are walking with me. I like the depression."

"I am getting real honest-to-goodness food. Three years ago we had filet mignon once a week, now we have round steak and flour gravy. Then, we had roast breast of guinea hen, now we are glad to get sow-bosom with the buttons on it."

"I like the depression. My salary has been cut to where I can't afford to buy lettuce and spinach and parsley and we can't afford to have sandwiches and frozen desserts and all that dam foolishness which has killed more good men than the World War."

"I like the depression."

## Statistics

For those who like to juggle statistics, we offer this little story in figures, taken from the 1932 edition of the National Automobile Chamber of Commerce publication, "Facts and Figures of the Automobile Industry":

During 1931, 43,708 passenger car dealers sold 2,038,183 automobiles, which means that each dealer made approximately 46.5 sales.

In the same year, 31,101 dealers of household refrigerators sold 965,000 units—an average of 31 sales per man.

By Dec. 31, 1931, there were 22,347,800 passenger cars in use in this country, and approximately 3,500,000 household electric refrigerators—6.4 times as many autos as refrigerators.

And here is a significant postscript, taken from the June 8 issue of *ELECTRIC REFRIGERATION NEWS*:

The number of household electric refrigerators sold during the month of April, this year, exceeded the number of passenger cars sold during a concurrent period for the first time in history.



Miss Carolyn Hazzard of Ludington, Mich., 1932 National Cherry Festival Queen, keeps cherries and cherry products in a Gibson refrigerator.

## Rod Peters and Thomas A. Edison

Rod Peters, assistant sales manager for Servel Sales, Inc., with headquarters in Washington, D. C., was for six years a side-by-side worker with Thomas A. Edison. During most of that time their desks adjoined.

One of Rod's tasks during that time was working out a sales plan for Edison phonographs. Before getting up the plan he visited every Edison phonograph dealer in the country, travelling to 3,600 different towns and cities in the process.

Dealers placed Edison phonographs in popular barber shops, and furnished them with records, for a very small rental. While customers were being lathered and trimmed, they listened to the "re-created" tones of the Edison.

If they liked the music, they generally asked the barber what kind of a phonograph it was. If they didn't ask, he told them anyway, and informed them where they could buy it. And down went the customer's name on a slip of paper (the barbers were paid for names of prospects who eventually bought Edison phonographs).

According to Rod, the scheme was a great prospect-getter.

When Mr. Peters left the Edison organization to join Servel, he wrote out a formal resignation and sent it to Mr. Edison.

Mr. Edison read the resignation, scribbled some words across it, and mailed it back to Mr. Peters. Rod still has it. The words were:

"This is a wise move. Electric refrigeration is a coming industry."

distribution is a brand new field; and anybody who works out plans for the manufacturing and distribution of air conditioning equipment must start from scratch. He must study the product, study the market, and then try to figure the best and quickest way of funneling one into the other.

Joe says that he and Alexander the Great have nothing in common. Alexander, you may remember, signed for new worlds to conquer. Joe's new world offers a sufficiency of problems just now, thank you.

• • •

## Tall Tales Dept.

Noting that in the July 6 number of the *News-Globe* we resumed publication of a Tall Tales Dept., Publicity Director C. T. Mutchner of Frigidaire has sent us a clipping from the *Key West (Fla.) Sun*. "Mutch" nominates it for the title, "Tallest Tale."

If true—this masterpiece of a Florida newsman—some representative of a refrigeration manufacturer may be shipped off to Florida's balmy shores with orders to dump a tank car of arsenic in Pirate's Cove bay.

We quote the clipping in full:

"PIRATE'S COVE, Fla.—Jake Ekaj, Scandinavian squatter at an abandoned fishing hut three miles southwest, brought to the postmaster here today a queer creature in a bucket of ice water, which he says he caught at daylight about 10 rods off shore, on the bay side.

"The creature seems to be a fish the twin of which never has been netted in these parts. Jake Ekaj wore a scared expression reminding one a good deal of his name (forward and backward). Bringing the fish to the postoffice and taking it away again, the look on Jake's face was just the same."

The writer tried to get something good out of Jake; sought to get the fisherman to permit his find to be put

# We can't be far wrong!

NATURALLY, we believe the Kelvinator Franchise is the best in the industry. And when *1733 dealers come with Kelvinator in six months*, it makes us feel that we can't be far wrong—that Kelvinator *is* the best profit potential, the *most desirable franchise* in the industry.

During the first six months of this year, 1733 new dealers signed the Kelvinator Agreement. These dealers were of the type that would be welcomed in any organization. They chose Kelvinator. And if you were to ask any or all of them why Kelvinator was their choice, they would tell you it was because Kelvinator offered the soundest proposition and the greatest opportunity to build up a profitable, *permanent* business.

It is true that Kelvinator has the most complete line of models for the home, with many worthwhile exclusive features—the finest Commercial equipment for every

electric refrigeration need—a subsidiary finance company whose sole business is to handle refrigeration paper—and the longest experience in the industry. But, of equal importance, from your standpoint, is the high regard the public has for Kelvinator products and the things Kelvinator is doing, day after day, year after year, to broaden and safeguard this public acceptance and to help Kelvinator dealers **CASH IN ON IT!**

We shall be glad to explain this and other important features of the Kelvinator Franchise to any progressive merchant who is in business to make money this year, next year and ten years from now. Wire, write or phone to-day for our representative to call. **KELVINATOR CORPORATION, 14245 Plymouth Road, Detroit, Michigan. Kelvinator of Canada, Ltd., London, Ontario. Kelvinator Limited, London, England.**



# Kelvinator<sup>(573)</sup>

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### Are You Making Money?

HOWARD LEWIS, vice president and treasurer of the Kelvinator Corp. and one of the most interesting personalities in the electric refrigeration industry, habitually asks this question when he opens a conversation: "Are you making money?"

This query is typical of the attitude of leading executives of the industry. When T. K. Quinn, vice president of the General Electric Co., was manager of the company's electric refrigeration department, he is credited with having said: "We intend to see to it that our distributors make money."

Following up this idea, manufacturers have created departments which devise accounting systems for distributors and dealers, have worked out sales programs from start to finish, have educated distributor and dealer service men as well as salesmen, and have provided territorial representatives who consult with dealers and distributors regularly, and help them get more profits from their business.

### Analyze Balance Sheets

Some manufacturers go so far as to demand monthly balance sheets from each of their distributors. They analyze these statements in detail, and make suggestions which, they hope, will result in their distributors making more money.

Such procedure, of course, is in line with the fundamental policies of minute control and direction of sales laid down by John H. Patterson (whose methods as president of the National Cash Register Co. have been the foundation of practically every specialty selling organization), and in accordance with his determination that his agents should make money. Mr. Patterson is credited with being the first man in the history of sales management to publicize the idea that a manufacturer can't make money unless his agents do, and that the more money his agents make, the more the manufacturer will make.

Today field representatives of most manufacturers are having some of the toughest struggles of their lives trying to keep dealers in their territories on the straight and narrow path which leads to profits.

These representatives want their dealers to make money. It is their business to see to it that dealers adhere to the price schedule which factory and distributor have determined is the lowest possible series of prices on which profits may be obtained. And they are finding it a tough assignment to keep all their dealers under control.

### 'Chiseling' in Dealer Ranks

"Chiseling" is said to be an extremely common practice today. By "chiseling," field representatives mean the slashing of advertised retail prices so as to take sales away from dealers for the same product, as well as from competitors. "Chiselers" cut prices by eliminating the salesman's commis-

sion, cutting out advertising, and slicing the dealer's own discount.

Prospects obtain a price from one dealer, tell another dealer about it, receive a still lower quotation, and then continue the rounds until they get an electric refrigerator of established make at a price much below list. And the dealer who finally makes the sale is almost invariably taking it away from another dealer for the same machine, a dealer who has laid the groundwork for the sale by newspaper advertising, direct mail promotion, and personal contact. The result is a highly demoralized dealer situation in the localities in which "chiseling" is prevalent.

It is the task of the field representatives to prove to the "chiselers" that not only are they destroying morale in their own camps, but that they are missing an opportunity to make money. Field men must reiterate the old ABC rule that making a sale doesn't necessarily mean making a profit.

### Increased Volume Necessary

Records obtained in diversified fields of selling indicate that a tremendous increase in volume must be gained to make up for the cut in prices. Figures gathered by the Eddy-Rucker Co. of Cambridge, Mass., sales and advertising consultants, show that the practice of selling cigarettes (normally priced at 15 cents) at the rate of two packs for 27 cents, requires an increase of 190 per cent in dollar or unit volume to be profitable. The average increase actually effected, according to this report, has been only 80 per cent.

Cutting the price of tooth-paste from 50 to 39 cents, these figures show, requires an increase of 49 per cent in dollar volume to return the same gross profit in dollars. In some instances, a reduction of 15 per cent in selling prices is said to call for an increase in volume of 2400 per cent to offset the price cut.

These records would indicate that the man who cuts prices, hoping that the gain in volume will boost his profits, must be willing to take a long chance to gain what would appear to be but a small increase in net profit, if any. And competitors who are scared into cutting prices to "stay in the swim" apparently are willing to sacrifice sure profits on smaller volume in hopes of maintaining their present sales volume—whether or not they make any money at it. In other words, the "volume at any cost" fetish formerly worshipped by most manufacturers has now become a deity of small retailers.

By the end of this year, field representatives warn, they will have amassed data from a series of case studies among electric refrigeration dealers which will make available similar figures on price-cutting in the refrigeration industry. Already, they declare, they can point to numbers of "chiselers" retailers who have passed out of the picture.

### Too Many Dealers

After listening to stories of small-time dealers who hear about a prospective sale, rush to the buyer, offer him a bigger discount, take the sale away from the dealer and salesman who had done the real job of selling, then call up their distributor and order a box—satisfying themselves with five or 10 dollars on each refrigerator they sell by such means—manufacturers are beginning to regret their haste to extend their distribution facilities by adding indiscriminately great numbers of small retailers to their dealer list.

In laying their plans for next year, these manufacturers are going back to first principles. Saddened by their experience with the uncontrollable "chiselers" who joined the ranks of their organization when joining was easy and a brass band parade celebrated the signing of a franchise, manufacturing sales executives are figuring out ways and means of building their dealer lists from merchandisers who have proved that they know how to make money, and can make it over a long pull.

"Manufacturers can't make money unless their agents do," declared John Patterson. And the experience of 1932 is bringing home the rather obvious fact that it is more important to make money than to get coverage.

## Letters from Readers

### Parts, Supplies, Men

Trupar Mfg. Co.  
Dayton

July 16, 1932.

Editor:

I sincerely appreciate the mention you have given to us in your editorial, "Individuality vs. Monotony," as setting a constructive example. To individualize our product is what we tried to do when we developed this design, and we really feel that it has been the cause of our thriving considerable business.

Even more, however, I appreciate some other things mentioned in the editorial, particularly about the "availability of ready-made parts, supplies, and men," which were also mentioned in your editorial on "Ready-Made Personnel." That has been one of the things that has made it so easy for everybody to jump in, and you know the answer to that.

W. M. MYERS,  
Merchandising manager.

### Accurate Picture

Tennessee Furniture Corp.  
Chattanooga, Tenn.

July 16, 1932.

Editor:

Your editorial, "Individuality vs. Monotony," is very interesting and presents an accurate picture of the situation facing the industry today. The individualizing of products, however, as promising as it might appear, is extremely difficult, very expensive and likely to require frequent changes of model to maintain an individuality.

The United States patent laws do not give any enterprising concern adequate protection for designs. We would be faced with exactly the same problem that has faced the furniture industry and the ice refrigerator industry for years. As soon as a progressive concern produces a design that receives popular acceptance, half of the industry will have copied it either exactly, or with minor changes, within six months' time. The more frequently a factory must "tool up" for special designs, the higher their cost will be; the present competition is all in the low-priced field.

I am inclined to believe that the way out is for the reliable manufacturers to keep faith with the public by maintaining a high standard of performance of the product, hold their cost and merchandising expense as low as possible, "batten down the hatches and ride out the storm."

Many of the machines, being offered at the low prices today, you and I both know are going to fail completely during this summer's hot weather, and after the sheriffs get through with the manufacturers, the public will know the story and will reward those who have delivered the goods.

R. T. FRAZIER,  
Vice president.

### Agree Heartily

Rex Mfg. Co., Inc.  
Connersville, Ind.

July 15, 1932.

Editor:

We agree with you heartily in everything that you have said in your editorial on styling electric refrigerator cabinets, and hope to see much more published on the same subject.

R. W. HULL,  
Chief engineer.

### On the Other Hand

Leonard Refrigerator Co.  
14260 Plymouth Rd., Detroit

July 14, 1932.

Editor:

Amant the editorial in your issue of July 13, the only thing I don't quite like is the impression left about half way through your article, that refrigeration dealers are failing by the wayside in large numbers, and that the price jobs are practically responsible for their demise.

You may be right in this because of your broader knowledge of all companies' affairs. Frankly, we have not sensed it in Leonard, and are adding rapidly to our list of dealers.

I find it hard to understand why a dealer of reasonably good character cannot obtain financing even if he has not a supply of ready cash.

Reverting for a minute to the Kelvinator record, of which I have some knowledge, the figures show an increase this year in the sale of the higher priced units, that is, the fully automatic type, the ratio jumping from 32 per cent of the total domestic business in 1931 to 55 per cent in 1932, which would seem to prove that part of the public, at least, is willing to pay for extra value when it is pointed out to them.

I do not agree that it is hard for the housewife to tell the difference between a refrigerator selling for \$100.00 and one selling for \$200.00 even from the standpoint of outward appearance. Nevertheless we appreciate that salesmen must do their full share in directing the purchaser.

We have consistently pointed out in our sales talks in the field that it has become the salesmen's duty to show the

prospect the fallacy of buying a refrigerator of lower food storage capacity than their family requires, if they are to reap the economies and benefits that electric refrigeration brings.

We have gone to great expense and length to show salesmen through our Movietone the extreme care and precision necessary to build an electric refrigerator that will continue to perform in hot weather as well as cold, and over the period of years which the buyer might rightfully expect.

Where a good salesman does not come in contact with a prospect, and one of the low price jobs is purchased, a sale is lost temporarily.

I say temporarily, because just yesterday I listened to a merchandiser from a certain big city, where a certain big department store made an astounding record in a brief period of time in the sale of a very low price refrigerator. This merchandiser is now doing a nice business trading out (I think he said four out of five) of the cheap jobs on his own terms, and putting a good refrigerator in their place.

I have maintained constantly and optimistically, as is my wont, that one of two things could, and probably would, happen:

1. Either those who purchased a low priced unit would discover their error during the first spell of hot weather, or sooner, and become customers for something better (because I feel they would not blame electric refrigeration but rather their own poor judgment) and the industry would benefit because new users would be created.

2. Or, these cheap jobs would work satisfactorily, and the present high-grade manufacturers of established reputation would decide that their standards and policies were all wet, and go into the business of throwing things together "catch as catch can."

There is a great deal in what you say about overcoming the situation with new designs possessing eye appeal, convenience appeal, etc., and I haven't the slightest idea but that right now the experimental rooms of a great many manufacturers are quite busy.

As you know, color in various styles and forms has been tried in the past, and could not be said to have been successful. There is something about a refrigerator and the sanitary handling of foodstuffs that cries for white.

An electric refrigerator cabinet is designed to fit the requirements of automatic refrigeration. Over a period of the last 50 years many millions of ice boxes were built, and many designs tried out, so that the possibility of public acceptance of new shapes seems to me to be limited.

The invention and addition of convenience features strikes me as the "big out." In this respect, if you will allow me to say so, I think you misclassified our Len-A-Dor. It was not a matter of appearance, but an appealing convenience feature. (Although the Leonard of itself is a "looker.")

This was the leader of several convenience features appealing to the housewife, which is in a large measure responsible for the rapid public acceptance of the Leonard electric—admitting of course, that two and one-half million homes in which Leonard had earned a reputation for quality over several generations provided a splendid background against which to work.

Summing up, Value and not Price, will be the determining factor in the situation. The market will naturally divide itself into various price ranges, just as the automobile market did. The difference between refrigeration and automobiledom at the present time is that the leading manufacturers, at least, are trying to occupy almost the entire price range field.

The older and more reliable companies with a reputation to maintain, will have to decide just how far they can go without endangering a reputation built up by years of painful pioneering, and allow sales in the price classes below their limits to go elsewhere.

Your editorial caught me in a talkative mood.

A. M. TAYLOR,  
Merchandising Director.

Editor:

I believe you have made a very scholarly analysis of the present deplorable situation in the refrigeration industry and doubtless your suggestion that more attention be given to "styling the product" would help. We know it has been a decided advantage to General Electric to have had a distinctive type of machine.

I hope some movement may get under way to save the refrigeration industry from the deplorable fate which befell the radio business as a result of the same conditions which now beset us.

Your publication can very likely be a great force in pointing the way out and we commend you for the good work you have begun.

K. A. CONNELLY,  
Vice president.

### Scholarly Analysis

F. B. Connally Co.  
Billings, Mont.

July 16, 1932.

Editor:

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K. A. CONNELLY,  
Vice president.

# Distributors Answer Questionnaire on Merchandising Problems

## 220 Outlets Give Information Regarding Question of Refrigeration Sales

CHICAGO—Results of a questionnaire covering 24 problems of the refrigeration merchandising field have been compiled by the National Association of Radio, Refrigeration and Electrical Distributors, with headquarters at 32 West Randolph St., Chicago.

The questionnaire was sent to 820 names, and the returns numbered 220, or 27 per cent. Because it is said that the returns came chiefly from the "jobber" type of refrigerator distributor rather than from the specialty sales type, and included few distributors of refrigerators made by the older, pioneering manufacturers of the industry, the answers cannot be considered to show a cross-section of the refrigeration merchandising field as a whole.

### Questionnaire Committee

The 24 questions were worked out by a committee which included: Harry Alter, Harry Alter Co., Majestic distributor, Chicago; Peter Sampson, Sampson Electric Co., Norge distributor, Chicago; H. E. Richardson, Young, Lorish & Richardson, Chicago; David Trilling, Trilling & Montague, Norge distributor, Philadelphia; Herman Linde, Linde Appliance Co., Ice-O-Matic distributor, New York City; and Ludwig Hommel, Ludwig Hommel & Co., Norge distributor, Pittsburgh.

Results were kept confidential, and the questionnaires, once their answers had been compiled, were destroyed by H. G. Erstrom, executive vice president of the association.

Makes of refrigerators represented by the distributors answering the questionnaire numbered 17: Copeland, Crosley, Fada, Frigidaire, General Electric, Gibson, Kelvinator, Leonard, Majestic, Mayflower, Mohawk, Norge, Servel, Sparton, Starr, Westinghouse and Williams.

### 120 Cities Represented

One hundred twenty cities and 42 states were represented in the returns.

The first question asked what refrigerator was handled by the firm, and of course does not figure in the compilation of answers.

Question 2 asked on what basis of payments the wholesaler purchased from the manufacturer.

Seventy per cent, or 154 of the distributors purchase on sight draft bill of lading, they said; 12 per cent purchase on net 10 days, and 18 per cent on net 30 days.

From this point the questionnaire proceeds as follows:

3. Have you made any effort to obtain extended terms of payment from your manufacturer?

Distributors making such effort without success, 16 per cent; distributors reporting not making any effort, 84 per cent.

### Warehouse Stock

4. Does your manufacturer provide warehouse stock to draw from, or are all your shipments made direct from the factory?

Shipped direct from the factory, 95 per cent; shipped from warehouse, 5 per cent.

5. Does your manufacturer guarantee his refrigerator?

All 17 manufacturers were reported to guarantee their refrigerators. The length of the guarantee varies from one to three and a half years.

(a) Does his warranty cover cabinet?

All but one manufacturer guarantees the cabinet from one to three and a half years.

(b) Does his warranty cover finish of cabinet?

Fifteen manufacturers guarantee the finish; average—one year on lacquer and three years on porcelain.

(c) Should exterior finishes be guaranteed?

Ninety-four per cent of the distributors answered this question. Of this 205,

18 per cent believed the exterior finish should not be guaranteed; 6 per cent said the exterior finishes should be guaranteed for 3 to 6 months; 63 per cent said the exterior finish should be guaranteed for one year. Five per cent thought it should be guaranteed for two years, and 8 per cent thought 3 years was the right period.

### Manufacturers' Policy

6. What is the policy of your manufacturer with respect to the following:

(a) Defective compressors or parts thereof?

All questionnaires received reported that the manufacturers repair or replace free of charge any defective compressors or parts thereof for the length of their warranty period.

(b) Is any allowance made to you by your manufacturer for labor in replacing parts within the warranty period?

Four per cent reported such an allowance being made; 96 per cent reported that no allowance is made.

(c) Do you prepay freight on defective parts to your manufacturer, and does he prepay freight or express on defective parts to you?

Distributors answering this question numbered 217. Of these, 11 per cent said they did not pay freight either way on defective parts; 27 per cent pay freight one way; 62 per cent pay freight both ways.

(d) If finish of cabinet is guaranteed, does your manufacturer allow labor charges for refinishing?

Distributors answering this question numbered 195. Of these, 70 per cent reported that labor charges are allowed; 30 per cent reported that no labor charges are allowed.

### Sales Quotas

7. Are sales quotas insisted upon and enforced?

Distributors answering this question numbered 219. Of these, 20 per cent said that sales quotas are insisted upon, and 80 per cent said they were not. Of those with enforced sales quotas, 55 per cent thought the manufacturer's stand in the matter was reasonable.

8. What protection does your manufacturer give you against change in models or decline in price?

Distributors of five manufacturers reported that they receive no protection. The policies of the other 14 manufacturers varied from a 30- to a 60-day price change notice to complete price protection with rebates on stock on hand.

9. Do you believe the three-year guarantee should be continued by the manufacturer? If not, what do you suggest to replace it?

Ninety-nine per cent of the questionnaires received answered this question. Of these, 8 per cent thought the three-year guarantee should be continued; 92 per cent were against the three-year guarantee; 17 per cent suggested a three-month guarantee; 74 per cent suggested a one-year guarantee; 20 per cent suggested a two-year guarantee; and 5 per cent suggested other remedies.

### Advertising Expense

10. Do you share in the advertising expense with your manufacturer?

Eighty-seven per cent of the distributors reported that they do share in advertising expense, and 13 per cent said they did not.

(a) Please state how?

Most common practice appears to be on a 50/50 basis with manufacturers. There were several variations of this policy.

(b) Is the advertised list price the installed or f.o.b. factory price?

Forty-seven per cent reported that the list price is f.o.b. factory; 42 per cent reported the list price to be installed; 11 per cent reported no advertised list price.

(c) Which, in your opinion, is the better policy?

Twenty-six per cent reported that f.o.b. factory listing is considered best; 66 per cent think the installed price should be advertised; 8 per cent believe no list price should be advertised.

### Methods of Selling

11. What per cent of your total sales volume is made by your direct retail sales? What per cent by wholesale sales direct to apartment houses, etc.? What per cent by wholesale sales direct to retail sales?

The answers to this question cannot be taken to represent the true percentages of the units sold in the various ways, inasmuch as no complete figures on amount of business each individual distributor was responsible for was included in the question," the association reported.

12. On what basis do you sell refrigerators to your dealers?

Fifty-eight per cent sell on a C.O.D. basis; 19 per cent sell on terms, and 23 per cent sell both ways.

(a) Is any effort being brought to bear on you for extended terms for your dealers?

Sixty-four per cent reported that dealers were asking for extended terms; 36 per cent reported no such activity.

### Terms of Sales

13. Do you believe it good business for you or your dealers to sell on three-year terms? Two-year terms?

Only 6 per cent of the answers were in favor of three-year terms; 94 per cent believe such terms poor business; 54 per cent are in favor of two-year terms; 46 per cent believe such terms poor business.

Distributors answering this question numbered 217. Of these, 11 per cent said they did not pay freight either way on defective parts; 27 per cent pay freight one way; 62 per cent pay freight both ways.

(b) Is it successful?

Only 6 per cent of the answers were in favor of three-year terms; 94 per cent believe such terms poor business; 54 per cent are in favor of two-year terms; 46 per cent believe such terms poor business.

(c) If so, please state how?

The majority share on a 50/50 basis, the amount varying between \$3 to \$6 per unit, or between 1 per cent to 7 per cent of the list price.

(d) Is it successful?

Of the distributors cooperating with their dealers in advertising, 77 per cent believe it successful; 5 think it unsuccessful, and 18 per cent think it questionable.

(e) If not, what do you suggest to replace it?

Seventy-five per cent reported that dealers do their own servicing; 12 per cent reported that their dealers do some service on their own sales.

21. How do you handle your service for your dealers?

Seventy-five per cent reported that their dealers do their own servicing; 12 per cent reported that their dealers do some service on their own sales.

(a) Do your dealers render their own service on their own sales?

Seventy-five per cent reported that their dealers do their own servicing; 12 per cent reported that their dealers do some service on their own sales.

22. Do you guarantee free service on your refrigerator?

Seventy-nine per cent guarantee free service, and the other 21 per cent do not.

(a) For how long?

Two per cent guarantee it for 30 days to 3 months; 34 per cent for one year; 13 per cent for two years; 51 per cent for three years.

23. Do you share in the advertising expense with your retailers?

Eighty-five per cent of the distributors answering this question reported that they do share in advertising expense.

(a) If so, please state how?

The majority share on a 50/50 basis, the amount varying between \$3 to \$6 per unit, or between 1 per cent to 7 per cent of the list price.

(b) Is it successful?

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(c) If not, what do you suggest to replace it?

Seventy-five per cent reported that dealers do their own servicing; 12 per cent reported that their dealers do some service on their own sales.

24. Do you find it necessary to add a loading (freight and handling) charge in excess of the actual freight charges in order to set up proper reserves for these expenses and to take care of the service burden imposed on account of manufacturers' excessive warranties?

If so, how much?

Distributors answering this question numbered 176. Eighty-one per cent of these reported adding a loading charge; 19 per cent reported not adding any loading charge. The charges reported varied considerably.

25. What percentage of your dealers do you find are able to adequately install and service their own refrigerators?

Distributors answering this question numbered 182. Of these, an average of 39 per cent of dealers were shown to be able to service refrigeration.

such advertisements were common, and 57 per cent said they were not common.

### Loading Charges

18. Do you find it necessary to add a loading (freight and handling) charge in excess of the actual freight charges in order to set up proper reserves for these expenses and to take care of the service burden imposed on account of manufacturers' excessive warranties?

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(g) Do your dealers render their own service on their own sales?

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(i) Do your dealers render their own service on their own sales?

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(j) Do your dealers render their own service on their own sales?

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(k) Do your dealers render their own service on their own sales?

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(l) Do your dealers render their own service on their own sales?

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(m) Do your dealers render their own service on their own sales?

Seventy-five per cent

## DISTRIBUTORS REPLY TO POLICY QUESTIONS

(Concluded from Page 7, Column 5) of their servicing; 18 per cent reported that dealers do not service.

(b) Do you maintain a centralized service department for your dealers' sales?

Seventy-two per cent maintain a centralized service department, and the other 28 per cent do not.

(c) Do you employ a separate company to render service?

Four per cent do this; 96 per cent do not.

(d) What is your set-up for handling service in your rural territory?

Distributors reporting on this question numbered 171. Nine per cent of these request the dealer to return the box for repairs; 39 per cent service rural territories; 47 per cent ask their dealers service their territories; 5 per cent had other arrangements.

### Service Charge Reserve

22. What reserve do you set up per year per refrigerator for service?

Of the 125 replies received on this question, 28 per cent set up no reserve whatever; 7 per cent set up a reserve of \$10; 15 set up a reserve of \$8; 11 per cent set up a reserve of \$4 to \$5; the balance of 39 per cent reported reserves of from 75 cents to \$30 per unit.

23. Do you accept time payment contracts from your retailers?

Twenty-two per cent accept time payment contracts; 78 per cent do not accept time payment contracts.

(a) Do you endorse your dealers' time payment contracts?

Only 16 per cent of the distributors do this.

### Percentage of Profit

24. If you were handling refrigeration during 1931, approximately what percentage of profit did you make?

These replies were segregated in three divisions: (a) Distributors selling 90 to 100 per cent direct to the consumer; (b) Those selling 90 to 100 per cent direct to dealers; (c) combination of sales direct to consumer and dealers, or wholesale to apartment houses.

No. Rptg.	Gross Profit	Selling Expense	Gross Overhead	Net Profit
A 9	35 %	16 %	12 %	7 %
B 25	23 %	8 %	12 %	3 %
C 21	34 %	13 %	15 %	6 %
Total & average 55	29.1%	11.1%	13.2%	4.8%

### COMMENTS

Here are some comments received from jobbers who returned the questionnaire:

"The — chain stores do some questionable advertising on refrigerators, and the local association has been working with the — manager with the view of getting him to discontinue their bad practice in merchandising radio sets, but I doubt whether anything can be done with refrigerators or radio sets so far as these concerns are concerned."

"The only suggestion we feel we can make is to attempt to keep this branch of sales 'clean' and not to let it become demoralized as has radio."

### Anticipates Trouble

"Are just starting in with the — refrigerators so don't know the grief yet. But can imagine the trouble we will have with our average dealer. Believe though, the factory should arrange somehow for the trouble and expense we will have to go to, to service the units here under the one-year guarantee, and educate the dealer (if possible)."

"We have not received or sold any refrigerators to date. We propose to add to factory price, freight, dray handling and dealers' part of advertising. Also, a small fee for reserve for service to take care of cases where dealers refuse, neglect or go out of business. We will also publish installed price adding about \$10 more for installation and one-year service. This additional \$10 to protect dealer for above two items."

### Cubical Content Rating

"Should sponsor the establishment of a uniform method of rating the cubical content of a refrigerator. Should recommend the establishment of local refrigeration clubs. The curbing of misleading statements and claims made by salesmen can be improved by these clubs."

"Honesty in advertising statements—No trade-ins—No premiums—Straight legitimate merchandising."

"In factory advertising, I believe no price should be advertised, except to say 'Models priced as low as \$180, etc.' In dealer advertising, price may be shown successfully in some places, if the price is of sales value. Just how to control the advertising of various dealers is a problem. Have no suggestion to make. I think the utilities could cooperate with dealers in holding 'Food Shows,' etc. and in financing dealer

## Army Officers Buy 13 G. E. Units

SALT LAKE CITY—A colonel, majors, captains, a lieutenant and a sergeant, all attached to Fort Douglas, United States Army post near this city, have recently purchased 13 General Electric refrigerators.

The sales were made by Frank J. Clark, salesman for the Utah Power and Light Co.

Mr. Clark has lost only one sale at the fort and that to an officer who refused to buy unless the utility met his demand that he pay only \$5 a month during the life of the contract.

paper which would speed the sale of refrigerators."

"Believe that manufacturers should have a board of censors approving all advertising, with the purpose of eliminating superlative claims to superiority—long finance terms (not over 18 months as maximum)—limit of free service to one year; and more emphasis placed on the value of electric refrigeration in general to the user. Believe local organizations should be formed to include all refrigeration dealers to maintain established list prices, a definite limit on ice box trade-ins, minimum down payment, elimination of trial installations and limit of free service and length of finance extended."

"Code of Ethics—The large companies are fairly clean today. Sometimes size and finish stated in ads are misleading in ads of smaller factories. Public utility selling costs, advertising and finance charges should be segregated from regular operating cost. If these items cannot be made to stand on their own bottoms, they should not be added to the cost of producing the service they render whether gas or electricity. In other words, public utilities should sell appliances on the same basis as any merchant or quit selling."

### Should Face Facts

"Sixty-five per cent of all wired homes are in towns of 10,000 and under. Potential yearly market for not over 50 electric refrigerators. The manufacturer should face facts and not chase a bunch of theories."

"A one-year guarantee of replacement of defective parts and free service, to be eventually reduced to 90 days. Larger down payments and the elimination of meter-ice plan."

"All makes should be manufactured and advertised as to capacity of food storage, shelf room, etc. to the A.S.M.E. standard."

"All advertising of any descriptive nature of product should be factory copy and not individual dealer or distributor copy."

"One year guarantee complete."

"A suggested blanket service by each manufacturer through distributors, whereby customers will not have to pay high charges in case his particular unit is under par. Price is gauged from \$8 in the city to \$14 at the end of county."

"No free trials of any sort (inserted in contract with distributors or dealers)."

"Absolutely no allowance of any kind on trade-in ice refrigerators (insert in contract with distributors and dealers)."

"No dealers could merchandise more than one make at a time (in contract)."

"No premiums of any kind (in contract)."

"Manufacturer guarantee against price reduction and guarantee to repurchase from distributors any unused stock at prevailing costs if cancellation of contract (in contract)."

"Manufacturer establish zones and have one prevailing suggested list for each zone."

"Grant exclusive franchises for town or borough in which dealer is located, leaving country between towns as open territory."

### One Year Guarantee

"We are new in refrigeration and do not believe in more than one year guarantee. Believe terms could better be handled on 10-day basis. Advertising should be clear and free from any misleading statements. If prices are advertised, they should be installed and a national price established."

"We believe that every refrigerator should have an established installed price and that from this price the distributors and dealers cost price should be determined. In our particular case, we sell a dealer a line of boxes at a fixed price for all and f.o.b. —, there being no plus charge added that might change dealer discount by as much as 5 per cent. We believe that all lines should carry a discount of 40 per cent; that all lines carry a one-year guarantee, and that the seeds should now be sown to eliminate trade-ins which may soon be a serious matter."

"We believe that such practices of putting refrigerators out on approval—giving away dishes—foolish guarantees—should be stopped. Some companies are so hungry for business that they will stoop to almost anything. The trouble is that the large concerns

in large cities use questionable methods in selling and advertising, and the residents of nearby towns read about the 'wonderful propositions' and because their own dealer cannot compete, many good prospects do not buy at all."

### Revision of Guarantee

"One of the paramount issues in our estimation would be to secure revision of the present three-year guarantee entitling the customer to three years' free service. We believe that this guarantee is unfair to manufacturer, distributor and dealer; is economically unsound, and should be discontinued at the earliest possible moment."

"Another feature which we feel could be sponsored by the organization to advantage, would be to endeavor to secure an equitable to all schedule of discounts, applying to apartment house business. This business at the present time is being taken by many distributors at practical cost."

"We further feel that the featuring of small down payments together with the use of electric coin devices are unsound and should be discouraged."

"Selling refrigerators on a sane guarantee basis not to exceed one year. Discontinue trial demonstrations. Discontinue the sales talk of poisonous gas in competitive refrigerators. Public minds become confused."

### No Sales Franchise

"Believe there should be no contract between factory and distributor nor between distributor and dealer. Believe guarantee should be about same as our good automobiles."

"Distributors to buy at net price, f.o.b. factory, with freight equalization—manufacturer to provide 20 per cent gross for distributors and 40 per cent for retailers."

"Cooperative advertising plan to be used at direction of distributor, so long as amount is spent in one or more approved ways, i.e. newspapers, billboards, radio and specially approved displays. Enamel finish to go out."

"Code of Practices—In my opinion there are other practices entering into refrigeration sales in the market which should be corrected before we worry about advertising."

"1—Sale of refrigerators on 36 and 48 months with no down payment."

"2—Leasing of refrigerators on 36 and 48 months with no down payment."

"I think every legitimate distributor would benefit if standard practices as follows were adopted:

"(a) At least 10 per cent down payment required."

"(b) Maximum terms of 24 months on balance."

"(c) No leasing. The danger that lies in this particular class of business cannot in my opinion be exaggerated. The benefits are all one sided and lie entirely with the lessee."

"(d) Code of advertising."

### Wholesale Sales

"Our worst trouble has been wholesale distributors like hardware companies, selling machines to retail customers at dealers' prices as this customer happens to be in business handling some items jobbed by them. Something like the tire business. Too many people can buy at a discount from too many sources to allow these to be sold at the advertised list price. Suggest manufacturers watch their jobbers and eliminate this."

"Installed price to be shown in all local ads."

"Shorten the guarantee to 90 days. Manufacturers would sell jobbers on 10th Prox terms. Manufacturers would pay distributors a fair labor charge on defective units. Manufacturers should pay all transportation charges from dealers to distributors and from distributors to manufacturer on defective units when complete units are exchanged. Manufacturers, distributors and dealers should discontinue deliveries to purchasers (retail) without down payments, and should confine sales to a reasonable down payment. Sizes should be standardized and should all be either net or gross. Discounts should be lengthened so that the retailer has sufficient margin to stand the cost of outside selling."

"All manufacturers use same method of measuring and advertising cu. ft. capacity of refrigerator. All manufacturers work on same schedule of guarantee, namely one year."

"Our best thoughts for the higher grade manufacturers in the refrigeration industry to keep their product at a price so that they and their distributors can merchandise it profitably and also keep out of stores and chains that make everything depend on price."

"The writer sincerely hopes that the refrigeration industry does not conduct the internal suicide that the radio business did, but if the present price trend from these criterions, it looks like they might."

"We believe that such practices of putting refrigerators out on approval—giving away dishes—foolish guarantees—should be stopped. Some companies are so hungry for business that they will stoop to almost anything. The trouble is that the large concerns

## Town of 1,100 Buys Second G. E. Case

NORPHLET, Ark.—Despite the fact that this town has a population of less than 1,100, the Arkansas Power and Light Co. recently made its second installation of a D-100 General Electric conditioned air display case.

There are two stores here and each is now equipped with General Electric refrigeration. Both jobs were completed within the past 60 days.

The Arkansas Power and Light Co. is the sales outlet for O'Bannon Bros., General Electric refrigerator distributor in Little Rock.

to small operators who soon pass out of the picture.

"Over-selling by factory on refrigeration to distributors who never handled refrigerators before—untold losses in money could be saved and confidence kept, if factories would not take advantage of this situation. The smart manufacturer will recognize the new distributor's problems and make them his. I could go on indefinitely with this story."

"Factory representatives should be more thoroughly trained in technical end of product-merchandising and be in position to offer constructive help rather than use constant high pressure with its usual disregard for credit—good will and profit making for dealer, and ultimate ruin of a good dealer. This is not a myth."

### Low-Priced Bait

"Certain concerns advertise low-priced merchandise including low-price refrigerators, but the intending purchaser finds it practically impossible to buy those boxes because they are advertised only as a bait, and those stores refuse to sell them. It would seem to us that only collective action by the distributors of the legitimate lines of refrigerators can combat these evil practices."

"All makers of refrigerators should get together on their guarantee period. All refrigerators should be sold to dealers c.o.d. This will enable the distributors to pay their bills promptly and not take a loss on business at the end of the year. It will also keep the dealer from over-buying and getting himself in a jam with his distributor and will keep him from making bad sales, as he then knows that he will have to do business on his own money and not on the distributor's by asking always for extension of time on his bills."

### Local Advertising

"Five per cent of list price divided about equally between manufacturer, distributor and dealer, backed by national advertising of manufacturer. Local advertising to be controlled and administered by distributor according to the requirements of dealer's locality and conditions as to type of advertising most advantageous."

"We are not in wholesale long enough to answer this intelligently. We have inaugurated policy of adding \$10 to dealer price if we must install and service. We are at present cutting up half of this as service reserve without distinction as to outside or inside."

"The main difficulty of competition from local power company has been eliminated by the new policy adopted by public service companies."

### Code of Ethics

"We believe that a 'Code of Ethics' is valuable chiefly as a guide to be placed in the hands of retailers and their salespeople as an introduction to ethical methods of selling a competitive product, the mechanical details of which are wholly unfamiliar to the prospective purchaser."

"Where it is so easy to confuse the customer with claims and counter claims concerning the merits of the various mechanical 'features' of competitive makes of electric refrigerators, we believe that it is easy to abuse the confidence of the prospective purchaser and thereby eventually undermine his faith in the selling ethics of the refrigeration industry, which is, of course, detrimental to its future well-being."

"Concerning a Code of Advertising Practices, we believe that this is unnecessary if each manufacturer will see to it that the various selling points of his product are presented in a manner to accord with the two paragraphs above. We might point out as an example of unethical advertising that of the manufacturer of a mechanical refrigerator who advertises his product as 'costing less to operate than any other mechanical refrigerator.' While this may be a fact in a very few isolated sections of the country it is wholly untrue when advertised in a national publication."

"Misleading advertising is no doubt largely due to the misplaced enthusiasm of large advertising agencies. Manufacturers will aid the industry greatly by seeing to it that their advertising agencies keep selling copy strictly in accord with the facts. Other than this, there is little call for a Code of Advertising Practices."

"As for enforcing a Code of Advertising Practices within the industry: it cannot be done other than by persuasion."

## WARREN IS SPEAKER AT SALES CONVENTION

BEAUMONT, Tex.—V. P. Warren, president of The Warren Co., manufacturer of Warren commercial refrigerators, cabinets, coolers, and display cases, was the leading speaker at a convention of The Stedman Co., distributor in the states of Texas, Louisiana, and Mississippi.

Mr. Warren's subject was "Construction," and he described many of the Warren features which have been developed under his direction.

Lawrence D. Galewsky, manager of the fixture division of The Stedman Co., was in charge of the sales convention, which lasted two days.

Mr. Galewsky outlined a sales program built around the subject "Business Ethics," and B. A. Greenspan, sales manager for The Warren Co., addressed the convention on the subject "Concentrated Sales."

Officials of The Stedman Co., with Ed Stedman, Jr., as toastmaster, were hosts at a banquet in the Edson Hotel which closed the convention. Ed Stedman, Sr., entertained the entire convention



## REFRIGERATION STORY TOLD IN YORK BOOK

YORK, Pa.—The story of refrigeration's development over the last 50 years is told in handsome industrial photographs by York Ice Machinery Corp.'s new book, "Cold Magic."

First pages show photographs in a commercial ice-house, telling the story of the 1890 ice famine, and giving statistics to show that 59,000,000 tons of ice are produced yearly at the present time. Next comes a series of photographs and paragraphs to show refrigeration's application to our everyday lives.

### Application of Refrigeration

Included in this section are mentioned the applications of refrigeration to the meat-packing and merchandising industry; to the dairy industry; to the ice cream field; to transportation of perishables both from manufacturing plant to retail outlet, and from one continent to another.

Refrigeration and the conditioning of air for human comfort form the subject matter for the next pages. A moving picture theatre, a restaurant, a department store interior, a comfortable club-car are shown, and the accompanying story gives other uses, such as those in the operating rooms, nurseries, and other departments of the modern hospital.

Industry's progress would be retarded were it not for refrigeration, the book points out. Winter weather is necessary, even in July, for testing automobile and aeroplane engines; cold water, held at an even temperature, is needed in the rubber industry; shaving creams, furs and fabrics, baking, carbonation of beverages, rayon, cellophane, cigarettes, candles, are some of the things which require refrigeration for their manufacture and preservation.

Transition is then made from the uses of refrigeration into the manufacture of refrigeration equipment by York.

### Steps of Manufacture

Each step in the manufacture of the machines is shown—the pattern-maker who first makes the drawing into a three-dimensional object; the molding; the preparation of the metal to be poured into the molds; the shops where tools machine the parts into precise measurements; the testing rooms, where the parts are tested for uniformity and efficiency; the assembly department.

An interesting group of pages shows the steps in the manufacture of pipe, including the grinding, drilling, welding, bending, annealing, and testing processes. A special section is also given to the manufacture of tanks and other equipment for use by ice cream and dairy industries.

Such accessory products as cold storage doors, refrigerating lubricants, are pictured and described. The last few pages of the book show aerial views of the York, Grantley, and Canton plants of the York firm.

## KELVINATOR BRANCH HOLDS DEALER DERBY MEETING

PITTSBURGH—Kelvinator Sales Corp., Pittsburgh branch, informed its dealers of the Kelvinator Derby at a meeting in the Hotel Mayfair Roof Gardens recently.

George R. Ewald, general manager, assigned quotas for the derby. Reed Powell, domestic sales manager, discussed the retail portion of the contest.

Home Economists Eva McPherson and Phyllis E. Harris were welcomed by Mr. Ewald. Mrs. Hattie Chaney, former home economist in the territory, and now with May-Stern department store, Kelvinator outlet, was also present.

### STEWART-WARNER USES WINDOW CUTOUTS

CHICAGO—The use of tiny cutout figures to point out the features of the Stewart-Warner refrigerator, is being made in a window display which has been prepared by the Stewart-Warner Co.

### FLERON AUTOMATIC REFRIGERATOR LIGHT



HELPS SELL BOXES!  
INEXPENSIVE FINE APPEARANCE  
EASILY INSTALLED

M. M. FLERON & SON, INC., TRENTON, N. J.



## Priscilla and the Mayflower



Miss Priscilla Ely, pretty descendant of Priscilla and John Alden, stands by the modern Mayflower.

## About Home Service

By Gertrude Stanton

### New Recipe Books

Edna Sparkman's new Westinghouse Refrigerator Book was received last week, and it's a beauty.

The illustrations of foods are done in full colors; headings simulate a dashing handwriting. A canary-yellow banding is used to pick out the titles.

Suggestions of value to the Westinghouse refrigerator owner comprise the first section: conditions which determine freezing time; cleaning of the refrigerator; when, why, and how to defrost (many books tell only how); general storage directions; economy buying; ice cubes; directions for freezing desserts and hints on serving them attractively.

Then come sections of recipes: frozen desserts; ice cream and pudding sauces; beverages; baked goods; canapes and cocktails; left-overs in disguise; sandwiches; salads and salad dressings; menus for refrigerator meals.

It's a practical book, and although it includes recipes for Nesselrode pudding and caviar canapes, it also has such titles as "economy mousse," "easy ice cream," "child's charlotte," "chocolate thrift sauce," which should appeal to women who tire of reading recipes which call for rich and expensive ingredients.

Particularly well worked out, we think, is the "left-over" section. Varied suggestions as to ways of disguising left-overs are given, where space would not permit the inclusion of recipes. For instance, ham may be used, the book suggests, "as loaf with horse-radish sauce . . . creamed on waffles . . . in potato croquettes . . . minced with green pepper on toast . . . toasted luncheon sandwich . . . with scalloped potatoes . . . with macaroni."

### Electric Range Book

A companion piece, the new Westinghouse electric range recipe book, arrived in the same mail. This is the first recipe book designed especially for use with an electric range, that we have seen recently.

Divided into chapters, it tells: general directions for operating the range; cooking of meat, fish, and poultry (directions and recipes); oven dinners, including menus and directions for cooking in the most economical manner; vegetables and entrees; yeast bread and quick breads, including a chart which gives the temperature and length of baking time for each kind of baked dish; pastry and pies; desserts and puddings; sauces and soups; salads and salad dressings; and canning.

We might mention that the art of creating recipe books improves. We fell heir to several folders of recipe books dating from the year one in the refrigeration industry. The first ones were, for the most part, on cheap paper, poorly printed, with incomplete directions, and no pictures.

The last few—Marion Sawyer's "Cold Cookery," (Kelvinator), the new Servel book, and this new Westinghouse pair, among others—are on heavy glazed paper, beautifully done from a typographical standpoint, and of the type that one leafs through wistfully at about 11:45 a. m.

### Favorable Verdict

This story should probably be headed "Strange Experiences of Home Economists."

It seems that Calhoun, Ky., a village of 600 souls, is very Kelvinator-conscious. The dealer, Stiles Owens, is doing a job which would be a good one in a town of 3,000 or 4,000 people. Mr. Owens was anxious to have a cooking school.

When Virginia Coffman, home economist of Stratton & Terstegge, Louisville, Ky., got to Calhoun, she found that Mr. Owens had reserved the only room in town which was large enough for the school—the court room in the McLean County Court House.

The judge's bench was removed from the platform, and the regular cooking school background of several refrigerators, a kitchen table, and the necessary utensils were placed there. Little awed by her judicial surroundings, the colored assistant shredded cabbage, whipped cream, squeezed lemons, using the judge's bench as a work table.

Everything was almost ready when Miss Coffman realized that the dim courtroom needed much more light. The problem almost went unsolved, when somebody thought of borrowing the headlight on the ferry-boat which crosses Green River nearby.

Promptly at 2 o'clock, the court house bell, which is tolled only on court days, was rung with great energy, calling the town to the school. Sixty-three women, or about 10 per cent of the population of the town, responded.

Deliberately picking out 12 of the most skeptical prospects who ever attended a cooking school, Mr. Owens seated these in the jury box, while the other women pretty well filled the little court room.

Miss Coffman brought the group to order with several thwacks of the judge's gavel on the porcelain side of one of the Kelvinators.

Making the most of the situation, she called several Kelvinator owners to the witness stand to testify on various points which were brought up.

### Familiar Name

Familiar names sometimes appear in the general women's magazines. This month, Ada Bessie Swann, director of the home service department of the Public Service Electric & Gas Co., Newark, writes on "Electrical Aids to Good Cooking," in *Pictorial Review*.

Ada Bessie Swann is really one of the pioneers in the field of public utility home service work, but we wish we could convey without sounding coy the fact that she—well, she doesn't look like a pioneer.

Her article describes a meal which is prepared with the aid of three of the major kitchen appliances—refrigerator, range, and food mixer.

The menu consists of jellied tomato consomme, hot rolls (refrigerator rolls), relish, broiled lamp chops, shoestring carrots, mashed potatoes, cucumber-tomato salad, caramel-coffee mousse, cup cakes with soft chocolate-butter icing, iced coffee or tea.

## BUYER'S GUIDE

Manufacturers Specializing in Service to the Refrigeration Industry

SPECIAL ADVERTISING RATE (this column only) \$12.00 per space. Payment is required monthly in advance to obtain this special low rate. Minimum Contract for this column—13 insertions in consecutive issues. All advertisements set in uniform style of type with standard border. Halftone engravings of 100-line screen, either outline or square finish. No reverse cuts or heavy black effects. No charge for composition.

### Manufacturers and Assemblers of Electric Refrigeration!

Are you acquainted with the profit opportunities presented by Brunner Engineering Service—the result of equipment performance and production economy. If not, write or wire for the complete Brunner story NOW! Refrigeration Division, Brunner Manufacturing Co., Utica, N. Y.

### HIGH SIDES and COMPRESSORS by BRUNNER

## BARE COMPRESSORS

New 1/6 H. P. Twin 1 1/4" x 1 1/4"

For Sulphur Dioxide or Methyl Chloride

Other Sizes 1/6 H. P. to 50 H. P.

H. C. PARKER, LTD.

2600 Santa Fe Ave. (Factory), Los Angeles, California  
392 Clifton Ave., Newark, N. J.  
510 Larkin St., San Francisco, Calif.  
734 M. & M. Bldg., Houston, Tex.  
237 Roosevelt Bldg., St. Louis, Mo.  
37 W. Van Buren St., Chicago, Illinois

### We can take care of your entire requirements of



## Refrigeration Parts and Supplies

Stocks at

116 Broad St., New York, N. Y.

523 Arch St., Phila., Pa.

## Melchior, Armstrong, Dessau Co.



SELF-LIFTING PIANO TRUCK CO.  
FINDLAY, OHIO

Save one man on delivery. Make heavy lifting easy—quick. Eliminate damage to cabinets—floors—walls.

**X-70 REFRIGERATOR TRUCKS**  
Fit all cabinets, with or without legs, or in the crate. Capacity, 1,200 lbs. All steel frame, 4" rubber tired wheels, one truck with top casters and handles for tilting and rolling into delivery truck and on the stairs. Only pads touch cabinet. Last a lifetime. Complete set \$34.50. Ball bearing swivel casters on end end, \$5 extra.

**X-60 REFRIGERATOR TRUCKS**  
Handle leg cabinets only. Per set, \$31.50. Spring steel hooks to convert into X-70 available separately. Ball bearing swivel casters on one truck, \$5 extra.

**FINDLAY REFRIGERATOR TRUCKS**  
For leg cabinets only—padded steel frames—4" rubber tired wheels. Per set, \$18.00.

Manufacturers of Trucks for 32 Years

## A NEW FIN COIL by PEERLESS

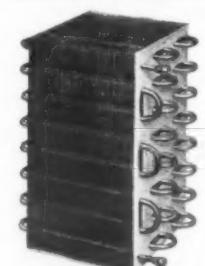
Wedge-locked and edge-locked aluminum fins on tinned copper tubing for methyl chloride, sulphur dioxide, F-12, etc.—aluminum tubing for ammonia. Absolute Metal to Metal Contact.

A Superior Coil in which Soldered Return Bends have been eliminated.

Priced to meet 1932 conditions.

Write—Wire for Catalog.

PEERLESS ICE MACHINE CO., 515 W. 35th St., Chicago, Ill.



## FIN COILS

Copper Tubing and Aluminum Fin Coils for Sulphur Dioxide and Methyl Chloride

Seamless Steel Tubing and Steel Fin Coils

For Ammonia and Methyl Chloride

Write for Catalog and Prices

REMPE CO.

340 N. Sacramento Blvd.

Chicago, Illinois

Phone Kedzie 0483

## HOUSEHOLD ELECTRIC REFRIGERATOR SPECIFICATIONS

Detailed specifications for 342 models made by 49 different manufacturers are tabulated in the June 29, 1932, issue of ELECTRIC REFRIGERATION NEWS.

Send \$1.00 for 17 weeks trial subscription and specify term to start with June 29 issue. A limited number of extra copies are now available.

Electric Refrigeration News, 550 Maccabees Bldg., Detroit

## REQUESTS FOR INFORMATION

Please refer to the 1932 Refrigeration Directory and Market Data Book for a complete list of all manufacturers of refrigeration equipment, parts, materials, supplies and accessories; also for all available statistical data on sales of refrigeration equipment, distribution methods, etc.

To obtain a copy of this book send \$2.00 to Business News Pub. Co., 550 Maccabees Bldg., Detroit, Mich.

Advertisers will be given preference in published answers to requests for buyer's guide service, but a complete list of all known suppliers will be mailed if stamped, self-addressed envelope is enclosed with inquiry.

Readers who can be of assistance in furnishing correct answers to inquiries, or who can supply additional information, are invited to address Electric Refrigeration News, mentioning query number.

## Electric Refrigerator Manufacturers

Query No. 872—"I wonder if you could tell me where to obtain a list of the most important manufacturers of electric refrigerators."

Answer—A complete list of manufacturers of electric refrigerators, both household and commercial, may be found in the 1932 REFRIGERATION DIRECTORY and MARKET DATA BOOK.

## Parts and Supplies

Query No. 873—"Will you kindly send us your catalog showing where we can purchase parts for electric refrigerators? We are contemplating going into the manufacture of electric refrigerators very shortly."

Answer—The book of which you speak is the 1932 REFRIGERATION DIRECTORY and MARKET DATA BOOK, in which a complete list of suppliers of parts and supplies for electric refrigerators is printed.

## Sales Statistics

Query No. 874—"We are anxious to obtain information as to the approximate number of units produced annually by the refrigeration companies listed on page 1 of the June 29 issue, ELECTRIC REFRIGERATION NEWS."

Answer—All available statistical information regarding the sale of electric refrigerators is published in the 1932 REFRIGERATION DIRECTORY and MARKET DATA BOOK. Totals only are given, however.

## Ethyl Chloride

Query No. 875—"Would you be kind enough to give us the names of two or three places where we can purchase ethyl chloride for a Holmes electric refrigerator?"

Answer—The names of suppliers of ethyl chloride refrigerant are listed on page 286 of the 1932 REFRIGERATION DIRECTORY and MARKET DATA BOOK.

## Easy-Out Ice Cube Trays

Query No. 876—"Can you give us any information as to where we can buy the Easy-Out ice tray?"

Answer—This product is manufactured by the McCord Radiator & Mfg. Co., 2557 East Grand Blvd., Detroit.

## CHICAGO U. PRESIDENT'S HOME EQUIPPED WITH G. E.

CHICAGO—R. M. Hutchins, president of the University of Chicago, who three years ago leaped into front page prominence as the youngest man to be named president of a large university, is one of the most recent names added to the list of General Electric refrigerator users.

H. M. Packer of the retail sales department of R. Cooper, Jr., distributor in Chicago for the General Electric refrigerator, by talking to the chief engineer of the university and the superintendent of buildings and grounds, obtained the order.

## TO THE CANADIAN TRADE

You can get quicker delivery at lower cost by ordering from us

## We carry in Stock

COMPRESSORS—COMPRESSOR UNITS—NON-FROSTING COMMERCIAL COILS—BOILER TYPE COILS—COPPER TUBING—FLARE AND SOLDERING FITTINGS—THERMOSTAT AND PRESSURE CONTROLS—DEHYDRATED OIL—AND MANY OTHER PARTS.

## THE ARCTIC ICE &amp; FUEL CO., LIMITED

Winnipeg, Man.

## WOLVERINE

## Seamless Dehydrated Tubing

Big Stocks Carried For Your Convenience

Shipment Guaranteed Within 48 Hours on  $\frac{1}{4}$ ",  $\frac{3}{8}$ " and  $\frac{1}{2}$ " in 25, 50 and 100 ft. coils;  $\frac{5}{8}$ " in 25 and 75-85 ft. coils. Plain or tin-plated. Solder sealed.

Eastern Sales Office  
420 Lexington Ave., New York  
Los Angeles Office 1015 East 16th St.  
26 Sales Offices



Wolverine Tube Co.  
1491 Central Ave., Detroit  
Export Dept.—H. M. Robins Co., Detroit

## COMBINATION SUBSCRIPTION RATES

How to save money on your subscription order

NO.	PUBLICATIONS	YOU PAY	YOU SAVE
1	Electric Refrigeration News (1 Year) and Refrigeration Directory and Market Data Book	\$4.00	\$1.00
2	Electric Refrigeration News (2 Years) and Refrigeration Directory and Market Data Book	\$6.00	\$2.00
3	Refrigerated Food News (1 Year) and Refrigeration Directory and Market Data Book	\$2.00	\$1.00
4	Refrigerated Food News (1 Year) and Electric Refrigeration News (1 Year)	\$3.50	\$ .50
5	Refrigeration Directory and Market Data Book and Electric Refrigeration News (1 Year) and Refrigerated Food News (1 Year)	\$4.50	\$1.50
6	Refrigeration Directory and Market Data Book and Electric Refrigeration News (17 Weeks)	\$2.00	\$1.00

Order by number. Use coupon below. These rates for U. S. only.

## Group Order Rates for U.S. and Foreign Countries

PUBLICATIONS	NUMBER	UNITED STATES*	CANADA†	ALL OTHER COUNTRIES
Electric Refrigeration News	1 subscription	\$3.00	\$6.00	\$4.00 These foreign 5 or more, each... 2.75 5.75 3.75 rates will 10 or more, each... 2.50 5.50 3.50 be increased 20 or more, each... 2.25 5.25 3.25 on or before 50 or more, each... 2.00 5.00 3.00 Jan. 1, 1933.
Refrigerated Food News	1 subscription	\$1.00	\$2.00	\$1.50 These foreign 5 or more, each... .95 1.95 1.45 rates will 10 or more, each... .90 1.90 1.40 be increased 20 or more, each... .85 1.85 1.35 on or before 50 or more, each... .80 1.80 1.30 Jan. 1, 1933.
BOTH PAPERS	1 subscription	\$3.50	\$7.00	\$5.00 These foreign 5 or more, each... 3.25 6.75 4.75 rates will 10 or more, each... 3.00 6.50 4.50 be increased 20 or more, each... 2.75 6.25 4.25 on or before 50 or more, each... 2.50 6.00 4.00 Jan. 1, 1933.

\*U. S. and Possessions and Pan-American Postal Union Countries.

†High rates for Canada are due to Canadian tariff of 5¢ per copy

## SUBSCRIPTION ORDER

BUSINESS NEWS PUBLISHING CO.,  
550 Maccabees Bldg., Detroit, Mich.

Enclosed is remittance for \$.....  
 Please enter my order for COMBINATION OFFER NO. .... at \$.....  
 Enter subscription to Electric Refrigeration News  1 Year \$3.00.  2 Years \$6.00.  
 Enter subscription to Refrigerated Food News  1 Year \$1.00.  2 Years \$1.50.  
 Send 1932 Refrigeration Directory and Market Data Book. \$2.00 per copy.

Name .....  
Address .....  
City ..... State ..... 7-27-32

## WINNERS LISTED IN KELVINATOR CONTEST

(Concluded from Page 1, Column 1)

Electric Light and Power Co. of Baltimore, Md., was second in this event, winning \$20, while L. E. Stempfley of the Detroit Kelvinator branch took third prize of \$15.

A similar special event with like prizes was held in relation to milk cooler sales, and this was won by A. W. Robinson of the Consolidated Gas Electric Light and Power Co. of Baltimore. H. W. Woolf of the Virginia Public Service Co., Alexandria, Va., won second place, and Paul A. Carlen of Werley's, Allentown, Pa., took third.

In the main contest in which prizes were awarded for the greatest amount of dollar volume sales, five cash prizes of \$50 each went to Stempfley, Robinson, Davies, F. J. Meoni of the Kirkmeyer Electric Co., Richmond, Va., and J. F. Staples of the Detroit Kelvinator branch.

## Winners of \$25 Prizes

Cash prizes of \$25 were won by the following:

E. Roberts, Kelvinator Sales Corp., Cambridge, Mass.; B. Meyer, Kelvinator Sales Corp., Long Island City, N. Y.; N. Simon, Kelvinator Sales Corp., Long Island City, N. Y.; S. Seelig, Kelvinator-St. Louis, St. Louis; R. J. Barr, Kelvinator Sales Corp., Cambridge, Mass.

J. P. Ashner, Graybar Electric Co., Cincinnati; Wm. F. Keller, Kelvinator Sales Corp., Detroit; Frank McCann, Landis Electric Co., Lancaster, Pa.; Samuel Yudkin, Kelvinator-Ansonia, Ansonia, Conn.; D. E. Thorpe, Consolidated Gas Electric and Power Co., Baltimore.

Leon Hampton, Sullivan Valve and Engineering Co., Butte, Mont.; Horace Wolf, Virginia Public Service Co., Alexandria, Va.; F. Bischofberger, Public Service Co., Denver; F. D. McCoy, 555 Inc., Little Rock, Ark.; Frank Rock, Earle Rogers Co., Wheeling, W. Va.

Awards of \$10 in cash went to the following:

A. R. Clemons, G. S. Blodgett Co., Burlington, Vt.; Paul Carlen, Werley's, Allentown, Pa.; J. Pope, Commonwealth Edison Co., Chicago, Ill.; R. H. Jancke, Public Service Co., Denver, Colo.; A. H. Warne, Kelvinator Bohman, Hagerstown, Md.; H. W. Summers, Consumers Power Co., Grand Rapids, Mich.

M. L. Boyd, I. Hutter, P. Levine, P. Loeb, J. Rosenberg, A. Rostal, S. B. Shapire, S. F. Smith, H. G. Stein, H. Sundheimer, all of Kelvinator Sales Corp., Long Island City, N. Y.

W. W. Woodward, Northern States Power Co., Minneapolis, Minn.; G. L. Carr, Tom Cooper Motor Co., Oklahoma City, Okla.; James McGonigal, Kelvinator Sales Corp., Pittsburgh, Pa.; Mike Hannigan, Kelvinator Sales Corp., Pittsburgh, Pa.

Verne Evans, D. T. Lansing Co., Scranton, Pa.; E. L. Smith, D. T. Lansing Co., Scranton, Pa.; G. M. Kammerer, Wisconsin Valley Electric Co., Wausau, Wis.; B. B. Twiddle, Consolidated Gas Co., Baltimore, Md.; Frank Graves, New Hampshire Power Co., Newport, N. H.

## Awarded \$5 Each

The following salesmen won \$5 cash prizes:

Herbert Boomer, Albany Garage Co., Albany, N. Y.; T. Hanpel, Albany Garage Co., Albany, N. Y.; N. E. Braverman, Werley's, Allentown, Pa.; R. E. Babcock, Consolidated Gas, Baltimore, Md.; A. W. Cairns, Kelvinator Sales, Cambridge, Mass.; C. N. Utley, Kelvinator Sales, Cambridge, Mass.

F. Besch, G. Fryder, M. E. Robinson, Jack Stone, H. W. Sturgeon, all of Commonwealth Edison Co., Chicago, Ill.

R. J. Boyd, Wiswell Radio Co., Chicago, Ill.; A. F. Wood, Kelvinator Cincinnati, Cincinnati, Ohio; George Baker, Williams Hardware Co., Clarksburg, W. Va.; George Davis, Williams Hardware Co., Clarksburg, W. Va.; C. T. Betts, Kelvinator Sales Corp., Cleveland, Ohio; A. E. Stuckert, Kelvinator Sales Corp., Cleveland, Ohio; E. A. Victor, Kelvinator Sales Corp., Cleveland, Ohio.

J. H. Morrison, H. E. Sorenson, Des Moines, Iowa; D. W. Camp, Kelvinator Sales Corp., Detroit, Mich.; W. P. Winter, El Paso Electric Co., El Paso, Tex.; J. W. Jennings, Rawls-Jennings, Gastonia, N. C.; F. W. Kelly, Kelvinator Kelly, Harrisburg, Pa.; Carl R. Corrady, Consumers Power, Grand Rapids, Mich.

M. Coulmas, S. Fisher, J. Jall, A. Lehman, N. J. Meister, S. Moore, L. Nitishin, A. Nussbaum, P. W. Perry, A. Pochras, W. Rureode, E. Siecke, H. Smith, T. J. Tilney, all of Kelvinator Sales Corp., Long Island City, N. Y.

W. Burke, Public Service Co. of N. H., Manchester, N. H.; Otto Hague, Harloff Electric Co., Madison, Wis.; Henry Cassidy, New Hampshire Power, Newport, N. H.; R. J. Dunphy, Northern States Power Co., Minneapolis, Minn.; F. L. Kradel, Kelvinator Sales Corp., Pittsburgh, Pa.; Clarence E. Gile, Cumberland Co., Power and Light, Portland, Me.

Harry Newcombe, Cumberland Co., Power and Light, Portland, Me.; C. I. Hoagland, Calkins White Furniture Co., Pueblo, Colo.; H. Kachel, Metropolitan Edison Co., Reading, Pa.; E. G. Ould, Thurman Boone, Roanoke, Va.; W. E. Wheeler, Kelvinator Sales Corp., St. Louis, Mo.; Harry Haid, Kelvinator Equipment Co., Wichita, Kan.

## Cooper Has 'Golden Gloves' Contest

CHICAGO, July 27.—The Golden Gloves Contest for salesmen of R. Cooper, Jr., Inc., General Electric distributor, closed yesterday to end a month of competition.

Each week during the contest, the high-point range or refrigerator salesmen in each of the seven stores of R. Cooper, Jr., Inc., in its apartment house and retail staff, was awarded a ticket to the Golden Gloves boxing tournament held last night between America's Golden Gloves champions and the amateur champions of Germany.

When results of the contest are compiled, the three groups ranking highest are to receive prizes of \$250, \$150, and \$100, respectively, to be divided among their salesmen. All rankings were based on commission totals for each week.

Salesmen who won prizes at any time during the contest were given a banquet at the Morrison Hotel last night before the matches.

## RANGE SALES UP

CHICAGO—R. Cooper, Jr., Inc., reports its Hotpoint range sales for June as topping those of May by 183 per cent. Its refrigerator sales during June exceeded those of any June in its history.

The greater number of range installations has been made in apartment houses and hotels up to the present time, declares S. Nides, sales promotion manager of the Cooper firm.

Increased effort will now be applied in the field of household sales, Mr. Nides states.

At the present time, each of the distributor's seven dealerships in the Chicago area has one salesman specializing on range sales. Refrigerator salesmen are instructed to give all possible leads to the range "specialist."

## COURT ORDERS

CHICAGO—Many G. E. range and refrigerator installations have been made in Chicago apartment houses which are in receivership, according to S. Nides, sales promotion manager for R. Cooper, Jr., Inc., because such equipment aids in securing new tenants quickly.

Payment for appliances in apartment houses can be collected promptly after the houses go into receivership, by order of the court, the R. Cooper, Jr., organization has found. The distributor's legal representative merely presents his case to the court, pointing out that the electrical equipment was installed to increase the apartment house's rentability, and that it should be paid for immediately by the receiver. Without exception, Mr. Nides says, the courts have ordered that payment be made without delay.

## NEGRO SALESMAN SELLS 14 UNITS IN 3 WEEKS

INDIANAPOLIS—Paul Jones, colored salesman for the Walter S. Gibson Frigidaire sales force in this city, has sold 14 household models in less than three weeks.

Most of his sales are made among people of his own race, but his activity is not confined exclusively to that field. Jones seeks a psychological appeal adapted to each individual prospect whom he interviews.

## SOUTH DAKOTA VILLAGE IS 80% FRIGIDAIRE

BISON, So. Dak.—This village, with a population of 230 persons, has 17 household Frigidaire, 6 household refrigerators of other makes, and 7 commercial Frigidaire.

Bison has no railroad running through it, and does not even have a high-line serving the community. Joe Meginness, dealer at Isabel, S. D., made the Frigidaire sales.

## Distributors and Dealers Wanted

## THE CONDENSER

## One Detachment of Majestic Men Marches By—



When Majestic distributors and factory officials met recently in Philadelphia for the summer Eastern sales meeting, the following, reading from left to right, smiled for the camera: John F. Ditzell, sales manager, Grigsby-Grunow; B. J. Grigsby, president, Grigsby-Grunow; W. G. Pierce, assistant to the general manager, Grigsby-Grunow; J. J. Eagan, Peirce-Phelps, Inc., Philadelphia; C. C. Choate, Southern manager, Grigsby-Grunow; T. W. Bolger and Julian Loeb, Specialty Service Corp., Brooklyn; R. F. Healy, Erskine-Healy, Inc., Rochester, N. Y.; Elmer Hamburg, Jr., and Elmer Hamburg, Sr., Hamburg Bros., Pittsburgh; D. W. Mayberry, Peirce-Phelps, Inc., Philadelphia; Sam Goodman, Woodhouse Electric Co., Norfolk, Va.; T. Richardson, Peirce-Phelps, Inc., Philadelphia; C. R. Wagner and J. A. Doyle, Majestic New York, Inc.; F. V. Archer, Middle West manager, Grigsby-Grunow; T. Martin, Jr., E. M. Wilson & Son, Newark.

### Illinois Refrigeration Plant Offered For Sale by Trustee

(Concluded from Page 1, Column 4)

to this offer, and if no higher and better bids were received, the offer was to have been accepted.

The method and time of disposal of Plant No. 2 was to have been discussed at a creditor's meeting held the same day as the sale.

#### SMITH PROTESTS

MORRISON, Ill.—F. L. Smith, owner of the Steel & Porcelain Products Co., now operating in Plant No. 2 of the Illinois Refrigerator Co., has taken exception to three parts of the notice to creditors sent out by Philip H. Ward, referee in bankruptcy.

In two communications addressed to Illinois Refrigerator Co. creditors, Mr. Smith explains that he worked for that company for 17 years, during 12 of which he was a director, large stockholder, and executive officer.

The Steel & Porcelain Products Co. was established by Mr. Smith, he states, to continue the operation of Plant No. 2, so that established trade might be retained and served, and that many workmen might be employed. The business has, since April 15, employed a minimum of 20 men, and a maximum of 95 men.

Mr. Smith believes that the sale of the truck, the dies and jigs located in Plant No. 2, with the sale of Plant No. 1, is contrary to the best interests of the creditors, and points out that such a policy would destroy a going business.

"This clause constitutes elimination of any future possibility of the sale or leasing of Plant 2, as without its dies and jigs, it is only an empty shell . . .," Mr. Smith's communication states.

The notice sent out to creditors by Mr. Ward, the referee in bankruptcy, described several properties to be included in the sale of Plant No. 1, including "Block 1 of Summit Stove Works Addition to the City of Morrison, Illinois, excepting therefrom the Western 678 feet thereof . . ."

Mr. Smith states: "The Illinois Refrigerator Co. does not own all of Block I—Summit Stove Works Addition. The westerly 100 ft. wide adjoining the city limits is owned by E. A. Smith. Therefore, the proposed sale of Block I is really excepting the westerly 578 feet of that part that is owned by the Illinois Refrigerator Co. Plant 2 is in this space; 184 feet to the west of Plant 2 is more or less junk yard and oil stor-

age space, and the building is 294 ft. long. You can, therefore, see that only 100 ft. would remain to the east of the Plant 2 building . . . No part of Block I, Summit Addition, has ever in the past been considered as part of Plant I property. This block was not plotted until Plant 2 was built in 1913, and no part of Block I in this addition is used in the operation of Plant I."

Mr. Smith also takes exception to that part of Mr. Ward's notice which said, "The modern plant used for metal working in which the cabinets for electric refrigeration have been manufactured is known as Plant II, and neither that nor the office buildings are being offered for sale at this time."

Mr. Smith states, concerning this: "This might very easily lead any creditor to believe that after the proposed sale of Plant I there would still be very desirable property to be disposed of, much more valuable than that being sold. If the tools, jigs, and dies, auto truck and part of the land needed to go with Plant 2 are thrown in with Plant I sale, there will be very little left in Plant 2 for sale or lease."

In his second communication, Mr. Smith elaborates on the extent of the real estate mentioned in his first communication, and on what it contains.

He concluded by saying "Please bear in mind that the writer does not wish at any time to criticize the Trustee or the Court. I simply feel that there is certain information and facts the creditors should have without further delay."

### 1932 QUOTA EQUALLED BY ILLINOIS NORGE DEALER

WOOD RIVER, Ill.—Stocker Plumbing & Heating Co., of which Earl Stocker is proprietor, has sold the entire quota assigned to it for 1932 by Norge Co. of Missouri, distributor with headquarters in St. Louis.

Mr. Stocker established his firm in 1913, and only three months ago took the franchise for the Norge electric refrigerator and the Maytag washer.

Mr. Stocker features the two appliances in his two show-windows. The Norge window contains a Neon sign which burns 24 hours a day, and which is kept up to date with timely displays. The Maytag window contains a sign simulating a row of garments hung on a clothes line.

### KELVINATOR 'DERBY' BETTERS '31 RECORD

(Concluded from Page 1, Column 1)

Mason, president of the corporation, will be held.

Reports from the 10 tracks on which the Derby is being run (according to assigned quotas), showed the following horses (distributors) to be in the money at the end of the first one and a half weeks:

At Pimlico, Pittsburgh, Commonwealth, Boston; at Churchill Downs, Syracuse, Kansas City, Cleveland; at Arlington Park, Alexandria, Denver, and Wiswell (Chicago); at Belmont, Clarksburg, Wheeling, and Poughkeepsie; at Latonia, Hagerstown, Little Rock, and Williamsport; at Hawthorne, Birmingham, Indianapolis, New Orleans.

At Laurel, Roanoke, St. Joseph, Dayton; at Bowie, Erie, Canton, Ft. Wayne; at Washington Park, Bridgeport, Missouri Power, Mopscos; at Fairmont, Davenport, Casper, Pueblo.

### A-B STOVE CO. ANNOUNCES 5 NEW ELECTRIC RANGES

BATTLE CREEK, Mich.—Five new models of electric ranges have been placed on the market this month by the A-B Stove Co. here.

The ranges are built with two types of electric heating units, the high speed open unit and the super-speed Chromalox closed type unit. All ranges are automatic and equipped with time and temperature controls.

The line includes both console and table-top styles. Finishes at present include three colors—ivory, white, and green in various combinations.

One of the features unique to the new line is the larger oven with sliding racks which can be removed without reaching into the interior of the oven. Also there are special warming closets and broiling compartments.

### UTILITY SELLS 100% OF QUOTA IN 4 WEEKS

AKRON, Ohio—At the end of the fourth week of a special refrigeration campaign the Ohio Edison Co. had sold 100 per cent of quota and George Longwell, in charge of the company's refrigeration business expressed the belief that the selling organization would go 50 per cent above quota before the end of the campaign.

This company handles Frigidaire equipment.

### Alabaman Makes First Sale

FT. PAYNE, Ala.—C. E. McCartney, salesman for the City Electric Co. here, made the first sale in the Kelvinator Derby contest, which is now in progress. The contest started at 12 o'clock midnight. At 12:01 a. m. July 11, McCartney had sold a D-22.

First Derby ticket to be issued from the Kelvinator factory went to Edward S. Lee, salesman for the Detroit branch of Kelvinator Sales Corp. Although his sale was made after McCartney's, Lee brought his order to the factory in person to get the first ticket.

### GAS-ELECTRIC BUYS THORNE MOTOR CORP.

(Concluded from Page 1, Column 5)

electric trucks, refrigerator units, and electrically refrigerated room coolers, formerly made by the Thorne organization.

George Walton, for four years a vice president of the Thorne Motor Corp., is president of the Gas-Electric Corp. F. L. Armstrong is vice president, and R. V. Crawford, secretary-treasurer. Both Mr. Armstrong and Mr. Crawford were also former officers of the Thorne organization.

The new Gas-Electric Corp. will continue to manufacture the Thorne truck, and will continue under license the manufacture of the Thorne room cooler and air conditioner, and electric refrigeration unit.

A campaign on complete household refrigerators will probably be started this fall, according to Mr. Walton, while the room cooler business may be postponed until next season.

### MAYFLOWER DISTRIBUTOR ISSUES CATALOG

KANSAS CITY, Mo.—"A New Day in Merchandising" is the title of a consumer catalog of 64 pages which has just been sent to dealers of electric and gas appliances by Richards & Conover, Mayflower electric refrigerator and hardware distributor.

The catalog is printed in rotogravure and colors, and was designed to increase the volume of sales in the face of the Kansas-Oklahoma laws which prevent utility companies from merchandising

### G. E. OPENS DRIVE TO SELL AIR CONDITIONER

(Concluded from Page 1, Column 1)

mechanism which prepares the air and oil for combustion.

The control is fully automatic, being governed by a thermostat in the living quarters.

The air conditioning mechanism supplements the new furnace when it is applied to warm air systems. Steam from the boiler is supplied to an extended heat transfer surface in the air conditioner to supply heat to the circulated air.

As the air is circulated, it is filtered and humidified. The necessary pressure to force the air through the duct system is also supplied by the air conditioner.

By using steam as a heating medium for the warm air systems, the possibility of flue gas leakage into the house is eliminated. The amount of material in the heat transfer surface in the air conditioner is also much less than that in the cast-iron radiator of a warm-air furnace, and makes possible a more compact design, the manufacturers say.

The use of steam also makes it possible to locate the oil burner wherever it is convenient to obtain a stack connection to the chimney, while the air conditioner may be located at the place where the basement leader system may be brought conveniently to a common junction.

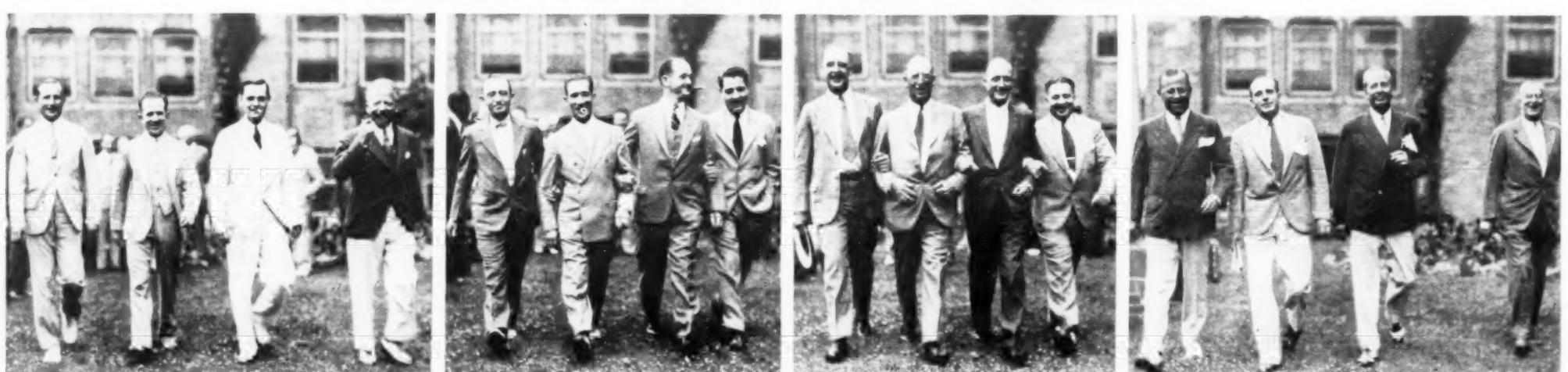
The blower of the air conditioner is started and stopped by the thermal control in response to small variations of room temperature. The control system starts the oil furnace simultaneously. The relative humidity of the air is maintained by the humidistat, which controls the operation of the humidifier in the air conditioner. The filters may be easily removed and cleaned.

### OPTICAL COMPANY BUYS FRIGIDAIRE CONDITIONERS

SIOUX CITY, Iowa—Complete air conditioning equipment has been installed in the quarters of the Sioux City Optical Co. store by D. K. Baxter, Inc., Frigidaire distributor here.

An air conditioning installation has also been made in a single apartment in the Bellevue Apartments. The owner lives on the third floor of the apartment house, and will have his entire apartment, except the kitchen, air conditioned. Two V-1 type conditioners were used in the installation.

### Closely Followed By Another Delegation



Another detachment of Majestic distributors and factory officials: H. Kay, Hamburg Bros., Pittsburgh; unidentified man; C. M. Phelps, Peirce-Phelps, Inc., Philadelphia; B. D. Colen, Majestic New York, Inc.; Carroll Taylor, Peirce-Phelps, Inc., Philadelphia; Cal Zamoiski, Jos. M. Zamoiski Co.; Fred Wilson, E. M. Wilson & Son; Charles R. Klopp, Southeastern sales representative, Grigsby-Grunow Co.; T. W. Green and H. G. Bevins, Erie Radio Supply Co., Erie, Pa.; R. M. Getchell, Grigsby-Grunow Co.; Joseph Hamburg, Hamburg Bros., Pittsburgh; F. D. Pitts, F. D. Pitts Co., Boston; H. P. Roberts, Stern & Co., Inc., Hartford, Conn.; W. S. Vivian, public utilities division, Grigsby-Grunow Co.; M. C. Robinson, Horrocks-Ibbotson Co., Utica, N. Y.

## ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office

The business newspaper of the refrigeration industry

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THREE DOLLARS PER YEAR

SERVEL DESIGNS  
NEW EVAPORATOR  
FOR AIR COOLINGHumidraft Refrigerates  
Walk-in Coolers,  
Storage Rooms

EVANSVILLE, Ind.—A new type of cooling unit, featuring forced air circulation, for walk-in coolers, storage rooms, candy hardening rooms, and other sizeable jobs has just been announced by Servel, Inc. Its chief purpose is to provide refrigeration where a comparatively high relative humidity is desired.

The Servel Humidraft, as it is called, cools the air by passing it through a closely nested set of fins and tubes. The air sweeps over these surfaces rapidly, resulting in a high rate of heat transfer for the amount of surface on the evaporator.

The air is circulated over the coil and through the refrigerated space by means of a four-blade, low-speed fan. This fan is so proportioned that it does not create a blast of air through the storage space, Servel engineers claim.

The new cooling unit is offered in five sizes. It is designed to maintain any temperature between 35 and 70° F., with a variation of 3° F. in ordinary service. Two or more Servel Humidrafts in the same refrigerator or in separate refrigerators may be connected to one commercial refrigerating machine. Likewise, the Humidraft in a cooler can be operated on the same machine with Servel-Larkin coils in a case or wall box, assuming that the desired temperatures are the same.

The Humidraft chilling unit is de-  
(Concluded on Page 2, Column 1)

REFRIGERATED TRUCK  
FLEET GOES ON ROAD

TRENTON, N. J.—A fleet of refrigerated trucks built on all-aluminum frames, and using solid carbon dioxide for cooling, has just been placed in service by the Davidson Transfer & Storage Co. for transporting perishable food products.

The trucks were built by Fitz Gibbon & Crisp, Inc., according to designs determined in collaboration with Davidson engineers.

Refrigeration is accomplished by the "Icefin" conduction system which is designed to produce as low as zero temperatures. Overhead plates, flush with the inside of the roof, pick up heat from the inside of the body, and feed it to the solid carbon dioxide stored in roof hatches.

Fins and bunkers do not take up space within the body's storage space, the designers point out, and since the hatches are reached from the outside, they can be charged when the truck is loaded with its shipment.

As air circulation is necessary for  
(Concluded on Page 2, Column 3)

## Silver Solder in Evaporators



After winding a Gibson evaporator, he solders it to the shell.

Gibson Engineers Prefer  
Silver Solder

GREENVILLE, Mich.—R. T. Smith, chief engineer of the Gibson Electric Refrigeration Corp., has adopted silver solder for brazing all joints in the Gibson machine that come in contact with the refrigerant, believing that it will result in an absence of leaks.

In the picture at the left appears a Gibson workman using silver solder on a freshly-wound evaporator coil for a 4-ft. refrigerator. The unit has 33 ft. 3 in. of copper tubing, fastened to the shell in two places.

The illustration at the right shows silver solder brazing connections made between the drawn brass receiver and a condenser. Seven joints are brazed in this assembly, Mr. Smith points out, four of which are between pressed steel feet and the brass receiver body.

Handy & Harmon's product is used for all silver solder operations, Mr. Smith reports.

REVERE COPPER CO. OPENS  
SAN FRANCISCO OFFICE

SAN FRANCISCO—Revere Copper and Brass, Inc., has opened a sales office in San Francisco at 1615 Russ building. R. H. Binns, Jr., Pacific Coast manager in charge of this office, was formerly assistant sales manager of the Rome division of Revere.



Assembling Fedders Commercial Coils

View in the commercial coil division of the Fedders Mfg. Co., Buffalo, showing girls assembling fins for Fedders' new non-frost commercial evaporators.

TWO NEW ICE-MAKERS  
ANNOUNCED BY ESCO

WEST CHESTER, Pa.—Two new ice-makers, with total ice capacities of 500 and 1,000 lbs. respectively, have been added to the line by the Esco Cabinet Co.

The Esco line now includes five models, with total ice capacities ranging from 75 to 1,000 lbs. The ice-makers are designed for use in hotels, restaurants, institutions, country clubs, estates, large homes, hospitals, etc.

The ice is made in cakes of approximately 25 lbs. each in the three smaller models, and in 50-lb. cakes in the two large new models. Special grids are available for making 256 ice cubes per 25-lb. can.

Exteriors of the ice-makers are of galvanized Armco ingot iron, trimmed with "Tidewater Red" cypress, and finished with enamel. The interior lining is of Armco iron, coated with a special brine paint. Five inches of insulation is furnished on the bottom of the ice-makers, 4 in. on the sides, and 2 in. in the lid.

Manufacturers are urged to return promptly the questionnaire requesting detailed information for a classified directory of comfort cooling systems to be published in this issue.

## Comfort Cooling

ARTICLES telling how specially-designed controls, evaporator units, and other parts have contributed to recent progress in the science of air conditioning will be an important feature of the next Engineering Section of Electric Refrigeration News, Aug. 10.

Manufacturers are urged to return promptly the questionnaire requesting detailed information for a classified directory of comfort cooling systems to be published in this issue.

ARMCO NOW IN PRODUCTION  
ON NEW ENAMELING IRON

MIDDLETOWN, Ohio—The American Rolling Mill Co. has just announced the production of a new enameling iron to be known as "Crystal Etched," with greater bonding qualities than former Armco sheet iron.

As the adhesion between the enamel and the metal will be uniformly strengthened, cull and rejection losses will be decreased, and there will be greater resistance to chipping and flaking, Armco engineers claim. Reboiling behavior is improved, and undesirable imperfections, such as black specks, are expected to be reduced.

Bassick Co. Introduces  
New Cabinet Dolly

BRIDGEPORT, Conn.—The Bassick Co. has just started production of a new triangular easter dolly for use in the legs of electric refrigerators.

The dolly is being furnished in three different models, with protective tread wheels for use in showrooms or on well-finished floor surfaces, with solid tread wheels for general service, and with steel wheels for use in moving cabinets around the warehouse or factory.

## Brazing a Gibson Assembly



Receiver-condenser assembly being fabricated by silver solder.

KELVINATOR SUES  
MANSFIELD FIRM  
ON SHAFT SEALLegal Action Alleges  
Domestic Industries  
Is Infringing

CLEVELAND—Suit has been filed against Domestic Industries, Inc., of Mansfield, Ohio, by Kelvinator Corp., Detroit, alleging infringement and contributory infringement on two Kelvinator patents on shaft seals for electric refrigeration compressors. The sued company manufactures Buckeye, Richland, and private brand electric refrigerators.

The suit was filed in the U. S. District Court, Northern district of Ohio, Eastern division, in equity No. 4259, and is based on Patent No. 1,329,348 issued to Edmund J. Copeland on Jan. 27, 1920, and Patent No. 1,499,740 issued to Frederick H. Kolbe on July 1, 1924—both of which are now owned by Kelvinator Corp.

The bill of complaint traces the transfers of title of the two patents from the inventors to the Kelvinator organization, through the various changes in corporate name of Kelvinator Corp., and claims that the inventions are "of great utility and value, that large number of refrigerating machines embodying said inventions have been manufactured and sold by the plaintiff and its licensees, and that the inventions have been of benefit and advantage to the public."

The bill requests an injunction preventing Domestic Industries from further infringement, and asks for an accounting by which the plaintiff would be paid damages.

Domestic Industries' answer to the bill has not yet been filed.

NEW DEVICE DETECTS  
LEAKING REFRIGERANT

SYCAMORE, Ill.—The Turner Brass Works of this city is introducing a new device for locating refrigerant gas leaks, to be known as the Turner Halide Refrigerant Gas Leak Detector.

It is designed to detect leaks of all chlorinated hydrocarbon refrigerants such as methyl chloride, ethyl chloride, trichlore-ethylene, methylene chloride, and dichlorodifluoromethane (F-12), according to R. S. Patten, sales manager.

The device consists of an alcohol-burning blowtorch with a special burner housing which syphons its air supply through a flexible detecting tube. If the open end of the tube is held in proximity to a leaky joint, the gas is syphoned through and on striking the burner, changes the color of the flame from blue to green.

Leaks equivalent to a loss of about 1 lb. of refrigerant in 7½ years have been detected with it, Mr. Patten claims.

The detector may also be used as a blowtorch for general service work such as soldering, heating coils to expel gases, etc., according to the announcement.

## SERVEL INTRODUCES FORCED AIR COOLERS

(Concluded from Page 1, Column 1)  
signed to be hung from the ceiling with its lowest point slightly above the top of the highest door or service window in the refrigerator. It should be at least 6 ft. from the floor of the refrigerator in any case, to allow head room for the attendant. In refrigerators where the walk-in cooler is on the wide side, or in nearly square boxes, the Humidraft may be hung toward one corner.

Temperature control is accomplished by a room-type thermostat, mounted on the wall directly opposite the unit, directly in line with the air flow (from door to opposite wall). The thermostat is connected in series with the fan motor so that the fan will run whenever the thermostat contacts close. Operation of the machine is regulated by a standard pressure control.

In operation, the fan starts first through the wall thermostat. When the air movement of the fan equalizes the refrigerator and chilling unit temperatures to a point corresponding to the cut-on point of the machine unit pressure control, the machine unit starts.

The machine unit and fan motor run simultaneously until the temperature in the refrigerator reaches the low point, at which time the thermostat contact opens, stopping the fan motor. The machine unit runs a few minutes longer, dropping the pressure rapidly to the cut-off point, Servel engineers explain.

### AMERICAN BLOWER COOLS ITS EXECUTIVE OFFICES

DETROIT—Several offices of the American Blower Co. here are being air conditioned by an installation of five of the new Sirocco series "O" units, operated from five tons of refrigeration

### Joins Gibson



F. L. TARLETON

### F. L. TARLETON JOINS GIBSON ENGINEERING STAFF

GREENVILLE, Mich.—F. L. Tarleton, formerly with Westinghouse Electric & Mfg. Co. at Springfield, Mass., has been appointed research engineer with Gibson Electric Refrigerator Corp.

Mr. Tarleton had been with Westinghouse in experimental refrigeration work for six years.

installed in the lower floor of the building. Two refrigerating machines are used, one a three-ton Universal Cooler. The installation will not only bring comfort to executives, but will serve as an experimental system.

## REFRIGERATED TRUCK FLEET GOES ON ROAD

(Concluded from Page 1, Column 1)  
proper cooling, floor racks are provided for use with solid loads. When not in use, these racks can be folded and stored in watertight compartments built into the side skirting of the body.

In addition to serving as dual purpose bodies, for use with either ordinary freight or refrigerated loads at any temperature, these bodies are fitted with a movable insulated partition to shut off part of the body from refrigeration and so permit economical shipment of partially refrigerated loads.

The truck is easily cleaned, as the waterproof, all-aluminum welded floor can be flushed out after every trip. The exterior of the truck is covered with polished aluminum.

The trucks are now in daily service transporting perishables over long distances and manned by operators trained to understand and handle critical loading and proper temperatures.

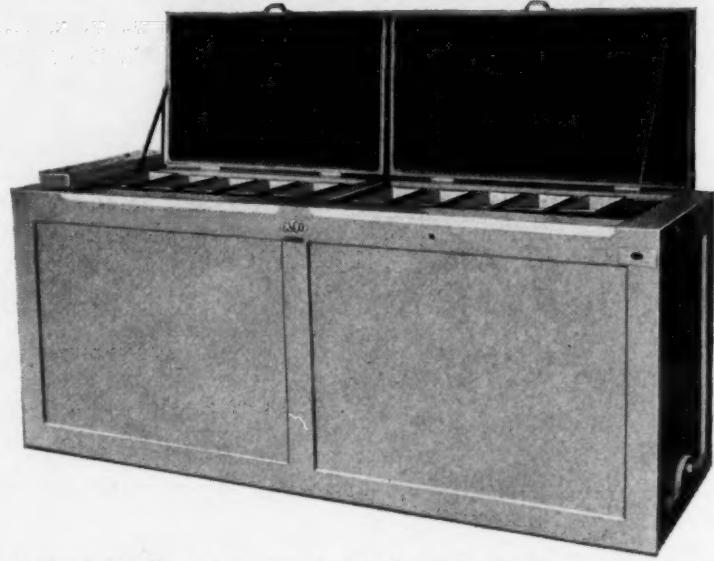
## INGERSOLL MAKES 2-PLY INGOCLOAD STAINLESS STEEL

CHICAGO—A two-ply stainless steel, known as Ingoclad Stainless Steel, is now being produced by the Ingersoll Steel and Disc Co., Chicago, a division of the Borg-Warner Corp.

Production is being handled at the manufacturer's New Castle, Ind., plant and, according to President R. C. Ingersoll, the steel is now being produced in various gauges and sizes of sheets. Facilities will be available shortly to supply all practical commercial sizes.

This new metal, according to the manufacturer, resists corrosion, and may be deep-drawn, stamped, welded, formed and polished.

## New Esco Ice Maker



A total of 500 lbs. of ice can be produced by Esco's new ice maker. Another model makes 1,000 lbs.

## Stresses Need for Good Engineers

## SERVICE MEN DEVISE COMPRESSOR COOLERS

BOSTON—Installation engineers of the Frigidaire Sales Corp. of New England have devised a method of water cooling the compressor valve plate of heavily-loaded air-cooled commercial compressors to improve their operation in summer weather.

As described in the June 30 special engineering issue of *The Servicaire*, which was devoted entirely to service and installation problems, the suggestion is reproduced below.

In certain localities where water costs are high, air cooled compressors are generally installed. Some difficulties with these compressors have been experienced due to oil carbonizing, causing excessive service costs where these units are overloaded under summer operating conditions.

This condition can be helped by changing the standard discharge valve plate of the air cooled compressor, replacing it with a water cooled compressor valve plate for the same size body, and then passing a small stream of water through this valve plate during the hot summer months.

The amount of water consumed in this manner is considerably below the amount which would be consumed using a regular water cooled unit, and the operation of the compressor can, therefore, be improved and service costs reduced. In controlling the water flow, four possible methods may be used:

1. Where the compressors are of recent manufacture and use the two-pole air cooled switch, the addition of a standard Frigidaire water control valve may be used to control the water flow. (With the older compressors using the single-pole switch, one of the following methods should be used.)

2. A hand-control water valve which may or may not be shut off during the night, depending on the operator's preference, or local temperature conditions.

3. A solenoid valve with water flow throttled by hand valve operated in parallel with the motor switch, the valve to open when motor starts and close when motor stops. (Use Arco No. 682.)

4. A Penn model XLI water valve, controlled by the head pressure, from the compressor body.

The following are the recommendations for the amount of water to be passed through the valve plates for the various size compressors:

Compressor	60°	80°	100°
1/3 & 1/2	5 to 6 gal.	6 to 7 gal.	7 to 8 gal
3/4	7 to 8 "	8 to 9 "	9 to 10 "
1 & 1/2	10 to 12 "	12 to 14 "	14 to 16 "

A test made with the 1 1/2-hp. compressor, using 11 gals. per hour of 60° water showed a cooling of 70 to 80° in valve plate temperature, depending on the head pressures. It is apparent therefore, that the method outlined should give considerable improvement in operation of air cooled compressor even when warmer water than 60° is available, especially when the units are well loaded or overloaded during the hot months of the summer.

## Eagle Foundry Co. Supplying Four Cabinet Sizes

BELLEVILLE, Ill.—The Eagle Foundry Co., local stove manufacturer, is building a line of electric refrigerator cabinets in four sizes, finished inside and out in vitreous porcelain. All models have the compressor compartment below the food compartment.

The full 4-post wood frame construction is used for the interior structure of the cabinets, according to M. G. Klemme, vice president of the firm, the parts being fabricated from kiln-dried Sitka spruce.

Steel panels in the cabinet are of Armco enameling stock of 20-gauge metal or heavier. Corners of the doors, sides, and tops are beveled.

The smallest cabinet, No. 375, has a gross food storage capacity of 4.77 cu.

ft., a shelf area of 6.7 sq. ft., with three shelves. It stands 51 in. high, 24 1/4 in. wide, and 26 1/4 in. deep. This model is insulated with 2 1/2 in. of Dry-Zero.

The three larger models are insulated with 3 in. of Dry-Zero, and have four shelves.

Model No. 4 has 5.3 cu. ft. of gross capacity, 8 4/5 sq. ft. of shelf area, and stands 58 in. high, 26 1/4 in. wide, and 25 1/4 in. deep. Cabinet No. 5 is rated at 6.5 cu. ft. of storage capacity, 10.4 sq. ft. of shelf area, and measures 59 1/2 in. high, 28 1/2 in. wide, and 26 1/4 in. deep.

The largest cabinet in the line is No. 7 with 8.1 cu. ft. of food storage capacity, 12.5 sq. ft. of shelf area, and measures 58 1/2 in. high, 32 1/4 in. wide, and 28 1/2 in. high.

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## Nickel Alloys Have Important Uses In Refrigerator Trim and Castings

By Herbert Chase  
Consulting Engineer, New York City

**NICKEL**, especially in alloys formed with iron or copper, has several important applications in electric refrigerator construction. Although nickel plating is still used also for plating cabinet parts, this use is a minor one as compared to the use of nickel in its alloys. Of these alloys, the most widely used one for cabinet parts is Monel metal, which contains about 67 per cent nickel, nearly all the remainder being copper. The largest use of this alloy in the electric refrigeration field is for ice cream cabinets in which the tops and many other parts are formed from sheet stock by stamping or by other processes commonly used in shaping sheet metal. Resistance to corrosion and a pleasing silver-like appearance, which can be maintained indefinitely, are important considerations affecting the choice of Monel metal.

### Parts for Refrigerators

It is immune to rust and its strength is equal to that of mild steel. Since its color is not dependent upon a surface coating, but is the same all the way through the stock, polishing and mechanical wear do not have the same effect as with a plated metal.

Some parts, such as door jambs, corner pieces and fillets made from Monel metal are employed in many makes of domestic electric refrigerators, and modern display cases utilize trim of the same material to set off porcelain panels and to protect them from damage. Hardware and similar parts can be stamped or forged from the same basic material, and parts such as screws and nuts are readily machined from bar stock. Much soda fountain equipment is made from the same material, chiefly in sheet form.

Many of the foregoing parts are made alternatively from what was formerly termed "German silver" but is today more generally called nickel-silver. Such alloys always contain considerable proportions of nickel and copper, but often have also large percentages of zinc. Of course they contain no silver.

Forgings and permanent-mold castings are made from nickel-silver or "white bronze." They afford good corrosion resistance, have excellent color, and are readily held within size-limits so close that relatively little finishing is required, with consequent savings in production cost.

### Hardware with Nickel Content

Castings of "white" nickel brass containing a minimum of 18 per cent of nickel, from 55 to 64 per cent of copper, the remainder being largely zinc, are sometimes used for parts requiring a metallic-white appearance. The higher the nickel content, the more nearly permanent is their color. Such castings are suitable for hardware and should have an ultimate strength of 30,000 lb. per sq. in., minimum.

In all the applications thus far mentioned, nickel-bearing alloys are employed primarily because of their resistance to corrosion and the pleasing and enduring appearance which their silver-like color affords. The same is not true in respect to alloy cast iron containing nickel, which is employed extensively for mechanical parts of electric refrigerators.

Besides securing a desirable degree of hardness without making machining difficult, nickel tends to make the hardness uniform at both thin and thick sections and to avoid the chilled edges which frequently cause trouble in the machine shop.

Chill can be prevented by other means, of course, one of the most common methods being to increase the silicon content of the iron. Although this may avoid chill, the physical properties of the metal suffer and heavy sections are likely to be porous or show open grain. The open grain often does not show up until considerable expense has been incurred in machining and frequently results in scrapping castings with attendant loss. Nickel, on the other hand, reduces chill without introducing the open grain.

For reasons already explained, the addition of nickel to iron castings improves their physical properties, but the extent of the increase remains to be stated.

### Extent of Strength Increase

Much depends, of course, upon the base mixture to which the nickel is added. In a mixture containing about 1.4 per cent of silicon and 3.6 per cent carbon, tests have shown an increase in tensile strength from about 22,000 to about 32,000 lb. per sq. in. with the addition of only 0.75 per cent of nickel. In this case, further additions of nickel produced only slight increase in tensile strength.

With the same mixture, the transverse (or bending) strength of test bars was increased from about 3,400 to about 4,500 lbs. per sq. in. with additions of 1.25 per cent of nickel, smaller amounts producing an approximately proportional increase, but larger amounts having but little added effect.

Compressive strength increase is about proportional to the amount of nickel added, at least up to 2 per cent. In one instance an increase from 75,000 to about 95,000 lbs. per sq. in. was recorded with the addition of 2 per cent of nickel.

Increase in strength is accompanied also by a higher degree of toughness. Strength figures considerably higher than those given are readily obtained

when the base mixture contains large proportions of steel, and much larger proportions of steel can be and often are used when nickel is added.

In the case of pistons and other thin-walled castings that must be machined, the thin walls are likely to result in chill that requires a high-temperature anneal (at about 1,450° F.) before machining can be done, if ordinary gray iron without nickel is employed. The result is a weaker structure that is less rigid and less wear-resistant.

The addition of about 0.75 to 1.0 per cent of nickel makes annealing unnecessary and gives a casting that is free from chill, readily machinable, dense and wear-resistant. This refers particularly to a mixture containing about 3.4 per cent total carbon and about 2.40 to about 2.55 per cent silicon.

### Practical Combination

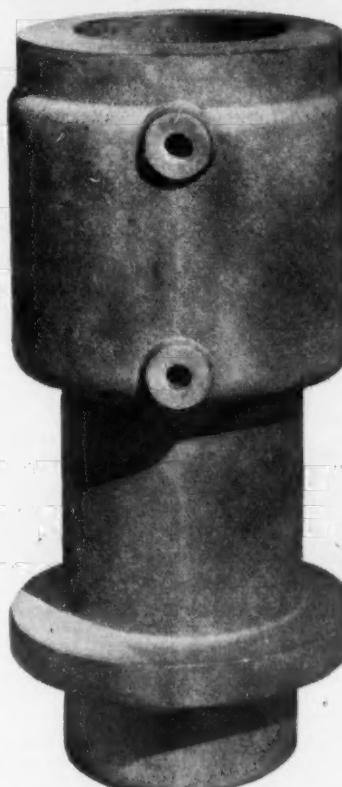
A large maker of small air-cooled compressors has found that cylinder castings having a total carbon content of 3.25 per cent, silicon content of 1.80 per cent and nickel content of 0.75 per cent have good machining characteristics and possess long-wearing qualities.

These castings formerly were made from an iron sufficiently high in silicon to render the thin cylinder flanges machinable, but were often open-grained and porous in the bore, so that rejections were high. In this, as in many similar cases, reduction of the silicon in combination with the addition of a small percentage of nickel produces highly satisfactory results.

Small percentages of chromium are sometimes added along with nickel to increase the toughness and wear-resistance of castings, but this element is not essential in most electric refrigerator castings.

The following analysis may be considered as typical of good practice in electric refrigerator castings in which the benefits derivable from but comparatively small proportions of nickel are desired: Total carbon, 3.30 per cent;

### 1% Nickel Cylinder



A Brunswick-Kroeschell water-jacketed cylinder having 1% nickel.

manganese, 0.60 per cent; phosphorous, under 0.30 per cent; sulphur, under 0.10 per cent; nickel, 1.00 per cent; and silicon, 2.00 per cent.

## ERECT STEEL FRAME FOR PORCELAIN HOUSE

**CLEVELAND**—The steel frame for the first porcelain-enamedled house, under construction with the cooperation of the Ferro Enamel Corp., has been erected in South Euclid, a Cleveland suburb, near Notre-Dame College.

Construction plans have been changed from those originally adopted, so that the entire exterior of the house will be made of porcelain-enamedled steel shingles, instead of large porcelain-enamedled panels. The shingles will be used on both roof and exterior walls. Ferro Enamel Corp. has only recently acquired patents for the shingles.

The backing for the shingles consists of 2 sheets of 24-gauge steel on either side of a 3/4-in. thickness of Celotex. This particular combination of Celotex and steel is known to the trade as Ferro-Clad, and is manufactured by the Truscon Steel Co., Youngstown, Ohio.

The Ferro-Clad is fabricated, and the sheets numbered at the factory, to avoid cutting out doors and windows, etc., on the job. A steel frame-work to which wood nailers are bolted, serves as a base for Ferro-Clad sheets on the outside of the frame-work, and for lath and plaster on the inside.

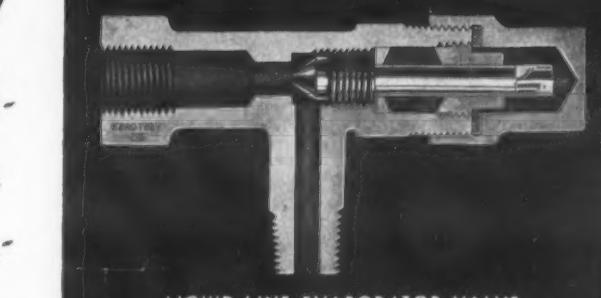
The first and second floor will be bar-joint, and the ceilings of the second floor and garage will also be bar-joint, so as to make the residence practically fire-proof, designers point out.

The outside walls will be of a rich buff limestone color, given contrast by blue-green shingles used at the foundation-line and just beneath the coping. The roof will be in three shades of russet. A dull-finish enamel is being used.

Charles Bacon Rowley and Associates, architects and engineers, are designers.



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## Judge Soper Decides Frigidaire Is Not Infringing Lewis Defrosting Patent

BALTIMORE—Affirming the decision of the U. S. District Court of Maryland that the Frigidaire Corp. is not infringing upon patents of the Motorfrigerator Co., Judge Soper of the U. S. Circuit Court of Appeals handed down a decision last month that was replete with descriptive information about the systems of the two companies. First brought in the district court, the bill of complaint alleged that Frigidaire infringed upon Motorfrigerator's method of disposing of moisture condensing upon the cooling unit of a household electric refrigerator by means of evaporation. The court did, however, affirm the validity of the Lewis patent of the Motorfrigerator Co.

The judge of the district court ruled that no infringement had been committed, and the Motorfrigerator Co. appealed to the U. S. Circuit Court of Appeals, docket number 3257. The suit was argued before Judges Parker, Northcott, and Soper.

J. LeRoy Hopkins and Edwin F. Samuels argued for the appellant, while Drury W. Cooper represented Frigidaire, with Thomas J. Byrne and W. H. Hudgins on the brief.

Judge Soper's decision is reproduced below:

This suit in equity was brought by the Motorfrigerator Co., assignee of the U. S. patent to A. S. Lewis No. 1,673,082 of Aug. 9, 1920, for patent infringement, alleged to have been committed by the defendant, Frigidaire Sales Corp. The patent relates to an improvement in automatic mechanical refrigerators, such as are commonly employed in domestic use.

The fundamentals of such a device, which are common to Lewis and to the prior art, are a compressor, a condenser, an expansion valve, an expansion or cooling coil, and conduits for the movement of the refrigerant from part to part of the apparatus in the operation of the cycle.

The compressor, operated by an electric motor, compresses a refrigerating medium, such as ethyl chloride or sulphur dioxide in gaseous form. It is conducted thence to the condenser and there converted from a gas into a liquid state. It then passes through the expansion valve into the expansion coil, where it is transformed or evaporated into a gas.

By the conversion of the liquid to a gas, heat is absorbed, and the heat-laden gas is conducted back to the condenser. The operation of the cycle may be indefinitely continued, but in practice it is arrested by a thermostat when the box or cabinet shall have been cooled to the desired extent, and it is started again when the temperature has risen to a fixed point.

In the operation of such devices, moisture from the food in the refrigerator is deposited upon the expansion or cooling coil and is there frozen and the coating of frost or ice becomes thicker and thicker, so long as the machinery is running. It is therefore common practice to stop the machinery at intervals in order to defrost the coil, that is, to melt the accumulated ice.

In the Lewis machine, the motor, compressor and condenser are situated in a space at the bottom of the box, designated as the operating chamber, while the expansion valve and coil are supported by a pan located at the top of the box in the refrigerating chamber above the space containing the food to be cooled.

The Lewis specification does not speak of defrosting the coil, but says that the cycle of operations is continued until sufficient heat units have been absorbed from the food chamber of the refrigerator to reduce the

temperature to the desired degree when a thermostat will operate to stop the motor.

After the temperature in the food chamber again rises, the thermostat will operate to start the motor and re-establish the cycle of operations. The specification states that the pan, which supports the expansion coil in the refrigerating chamber, serves to receive any condensation which may be formed therein; and the pan is drained by a drip pipe which runs downwardly into the lower compartment where the operating unit is situated.

A small open trap is attached to the lower end of the pipe, and the moisture is finally disposed of by evaporation induced by the heat emanating from the operating unit, and by the forcible expulsion from the chamber of the moistened air by means of a draft upwardly through a flue in the back of the cabinet.

Air for cooling the motor enters through an opening in the front of the operating compartment at the bottom, and passes out through the flue in the rear.

The Lewis refrigerator, as constructed for sale, contained two additional features in the operating compartment, not shown by the patent, to facilitate evaporation. They were fans to increase the circulation of the air, and a pan beneath the machinery to receive any overflow of water from the trap that might occur.

### Moisture Evaporated by Machine Heat

Lewis' claim to patentable invention resides in the disposition of the moisture deposited on the coil, i. e., in the plan for conducting the water condensed upon the cooling coil, from the upper or refrigerating chamber to the lower or operating chamber through a drip pipe and the evaporation of the water in the lower chamber from the heat there developed and the current of air created as described in the specification.

Not all of the steps in this operation were new, because the bringing down of the accumulated moisture from an upper refrigerator chamber to a lower operating chamber was known to the art. The novelty in the patent was necessarily limited to the method of getting rid of the water by evaporation, instead of by a drain pipe or by the removal of a receptacle from time to time in which the water had been allowed to accumulate.

Such an arrangement is not without value, particularly in the case of refrigerators for homes or apartments, because it makes it unnecessary to dump the pan of water from time to time.

The patent contains two claims which are as follows:

"1. In a refrigerator having cooling coils disposed within its refrigerating chamber, a moisture collecting pan disposed for collecting moisture, condensed on the cooling coil, means for feeding the condensed moisture out of the refrigerating chamber into a lower portion of the refrigerator, and means for thereafter causing air outside of the refrigerating chamber to absorb the said moisture and for expelling the resulting moistened air from the refrigerator.

"2. The method of reducing the moisture content of the air in the refrigerating chamber of a refrigerator, which consists in condensing moisture from the air on a chilled surface within the said chamber, conducting the condensed moisture out of the chamber,

causing air drawn from outside the refrigerator to absorb the condensed moisture, and forcibly expelling the thus moistened air from the refrigerator."

The narrow scope of the patent, in view of the prior art, is emphasized by the fact, as shown by the testimony of the inventor, that before he conceived his idea, he had in his possession a refrigerator built by one Wolf which resembled the Lewis device in most respects.

Wolf had the condensation incident to defrosting from the refrigerating into the operating department. He accumulated the water there in a pall hung in the compartment. Lewis substituted a trap for the bucket.

His sole claim to differentiation from Wolf is in removing the bucket, and in the provision for the opening in the lower part of the cabinet through which the air enters the operating compartment, and the flue at its back through which the air passes out. Speaking of the operation of his machine, Lewis gave the following testimony:

"In the operation of this machine the cycle consists of about 15 minutes operation and an hour of rest. During the operation of the machine, the cooling coils would become frosted with the condensed moisture from the air that was circulating over the food compartment through that coil. Then during the rest period the frosted moisture would melt off and be carried down into the pan below so that it was almost a continuous cycle of very frequent intervals and it was a continual collection of moisture carried down into the lower compartment. \*\*\* in this machine (the machine of the patent in suit) there was a continual change from defrosting to frosting, furnishing a small amount of water at all times.

### Continuous Trickling of Moisture

"The trickling down of the moisture from the cooling coil to what I regard as the pan, is practically continuous, due to the short period of accumulation of frost on the coil and the longer period that the machine is at rest when the defrosting takes place. That cycle was a matter of design with the whole apparatus, so that I built it with that sort of cycle in which the refrigerating period was 15 minutes and the idle or defrosting period was about an hour. That is the way my machine worked. It was carefully designed so that the heat of the compressor and condensing coil, plus the fan that I put in the chamber, would get rid of all the moisture about as it trickled down."

The first machine embodying the invention was built in December, 1920. The plaintiff corporation was formed and a few machines were built and sold; but the business was not a success and no manufacturing was done after the year 1924.

The Frigidaire machines, alleged to infringe the patent, are exemplified by one introduced in evidence as defendant's exhibit E, to which the discussion on the subject of infringement has been for the most part confined.

It comprises a cabinet containing a lower compartment, in which is housed the compressor, a condenser which receives the compressed refrigerant, in this case, sulphur dioxide, from the compressor, a suction fan on the compressor shaft for drawing air in and a fan on the motor shaft for expelling the air from the compartment, which is open at the back.

Suitable conduits lead from the condenser to conduct the liquid refrigerant to the expansion valve, and thence to the expansion coil in the food compartment which is located in the upper part of the cabinet. From this point the refrigerant is returned in gaseous state to the compressor.

A drip pan is shown under the refrigerating coil in the top of the refrigerator. A funnel, connected with a conduit, is arranged to receive defrosting water from the pan under the refrigerating coil, and pipe it to the lower compartment of the refrigerator into a removable defrosting pan located in the upper part of the operating compartment and mounted on guides to admit of its ready removal. This pan holds six quarts of water. It is employed to receive condensation during the defrosting operation of the refrigerator.

### Difference in Frigidaire

The Frigidaire machine differs in its method of operation from the Lewis machine shown in the patent in suit in substantial respects. Like the Lewis machine, the refrigerating apparatus does not run continuously but stops and starts automatically as the temperature falls below and rises above the desired point; and this starting and stopping continues automatically until the switch of the motor is shut off independently of the thermostat.

Unlike the Lewis machine, the temperature in the Frigidaire is maintained at so low a point as to cause the freezing of water in ice cubes in trays in the coil compartment. Even during the periods when the machine stops automatically, there is no melting of the frosted moisture which is deposited or frozen upon the cooling coil.

This connotes something quite different from the Lewis machine in which the cycle consists of alternating periods, one of 15 minutes, during which the machinery is in operation, followed by one of an hour of rest. During this entire hour, if not during the 15-minute period, there is a constant trickling of the moisture into the evaporating pan.

With the Frigidaire, there is no defrosting except in the regular defrosting periods which occur about once in two weeks in the summer and about once a month in the winter. Between defrosting periods, there is constantly accumulating deposit of ice upon the coil. During defrosting periods, the ice is melted off the coil and accumulates in considerable quantities in the pan in the operating compartment.

The material question of fact, having regard to the charge of infringement, is whether the water there accumulated is evaporated by the action of the heat produced during the operation of the machinery and by the currents of air which pass in and out of the operating compartment under the forced draught of the fans.

The complainant contends that the construction is substantially similar to that disclosed by the patent and that the evidence shows that as a matter of fact so much of the water is evaporated that it is not necessary to remove the pan in the top of the machinery department to prevent its overflow.

The defendant, on the other hand, contends that the pan is made removable so that it may be emptied, and that the evaporation caused by the heat in the passage of the air currents is so slight that over-

flow will take place unless this is done.

It is pointed out that the machinery is air cooled, as in most refrigerating machines for domestic purposes, and that the opening in the back of the refrigerator and the air currents superinduced by the fans are designed for the necessary purpose of cooling the machinery during the operation.

The district judge passed a decree dismissing the bill, being of the opinion that the plaintiff had failed to meet the burden of proving infringement. He found that in the operation of the defendant's machines, the defrosting water was not disposed of by absorption or evaporation, but by removing the drip pan into which the water had been accumulated and emptying it.

He therefore reached the conclusion that there was lacking in the defendant's device one of the elements of the patent described in Claim 1 as a means for causing the air outside of the refrigerating chamber to absorb the said moisture and for expelling the resulting moistened air from the refrigerator. The judge concluded, however, that the Lewis patent, if limited in scope to the kind of machine contemplated by the patent, was valid.

The affidavits indicated that this evidence had been discovered since the trial of the case, and the petitioner prayed the court that the case be reopened and it be given a further opportunity to present the new testimony. Counter affidavits were also filed. The district judge overruled the motion, being of the opinion that the petition was in effect one for rehearing filed after the term at which the decree had been entered, and that therefore under Equity Rule 69, no rehearing could be granted; and also for the reason that the evidence, as disclosed by the supporting affidavits, was merely cumulative and would not alter the original findings of the court in the matter of infringement.

### Appellant's Testimony

The substance of these conversations was that in machines like the one under discussion in which the drip pan for the accumulation of the defrosting water was placed in the operating department, the water would be evaporated during the normal operation of the machine and the pan would not have to be emptied.

Some reliance was placed by the plaintiff upon the location of the drip pan at a place not readily visible in the upper part of the lower compartment, and upon the omission in recent years from a poster on the refrigerator door of a caution to the user to empty the pan after defrosting.

There was in addition the testimony of an expert engineer who, without basing his opinion on an actual test, but replying on expert knowledge and general experiments with regard to conditions of evaporation, said that in his opinion the water produced by the defrosting operation in the Frigidaire machine would be caught in the pan in the operating compartment and evaporated without the necessity of dumping the pan.

There was no attempt on the part of the plaintiff to produce witnesses who had performed actual tests with defendant's machines; and this omission was the more significant in that the defendant's machines were openly sold at many places, thousands of them were confessedly in operation, and one at least was owned and operated in a residence of the president of the plaintiff corporation who testified as a witness in the case.

### Defendant's Testimony

The testimony of the defendant's witnesses, on the other hand, was uniformly to the effect that its salesmen were instructed always to warn users of Frigidaire machines to empty the pan at each defrosting for otherwise the accumulated water would be likely to overflow. No salesman was ever authorized to say that the defrosting water would be evaporated during the operation of the machine, and that it was unnecessary to dump the water.

In addition, there was evidence to show that the service department of the defendant had had complaints of the overflow of defrosting water within refrigerator, which was found to be due to the failure of the users to dump the water after defrosting. The defendant also relied upon expert testimony.

Under these circumstances, we think that the conclusion reached by the district judge was supported by the weight of the testimony. The evidence introduced by the plaintiff in his *prima facie* case was overcome by that of the persons having actual experience in handling the machines sold by the defendant.

The plaintiff contended that its failure to make an actual test of the defendant's machine in order to prove infringement, was more than offset by the failure of the defendant to produce the evidence of customers or users of the Frigidaire.

The rule was cited that when a plaintiff makes out a *prima facie* case, and there are facts known to the defendant but not available to the plaintiff which would settle the issue raised, and the defendant fails to prove them, then a presumption arises that the evidence, if produced, would be favorable to the plaintiff's claim.

There is no room for the application of such a presumption in this case for it is obvious that the alleged infringing machines were easily accessible to the plaintiff if he had seen fit to subject them to the test.

The evidence in the case would justify the finding that the Lewis machine disposes by evaporation of the moisture which continually trickles down into the operating compartment. There is no substantial accumulation of defrosting water at any time.

The conditions of the Frigidaire machine

are quite different, and it does not follow that the comparatively large quantity of water produced by it at infrequent intervals of defrosting will be likewise carried off by evaporation. The Lewis machine, as the patentee said, was designed to take care of all of the moisture created in the particular cycle of operation in which it is used.

The decree in this case was promulgated on Dec. 23, 1930. The term of court then current expired on March 3, 1931. Subsequently, to wit, on March 12, 1931, the plaintiff filed a petition supported by affidavits containing additional testimony similar to that introduced at the hearing of the case and tending to show certain statements by sales agents of the defendant, supported by a letter, to the effect that in the Frigidaire machine, the defrosting water was taken care of by evaporation and there was no need to empty the pan.

The affidavits indicated that this evidence had been discovered since the trial of the case, and the petitioner prayed the court that the case be reopened and it be given a further opportunity to present the new testimony. Counter affidavits were also filed. The district judge overruled the motion, being of the opinion that the petition was in effect one for rehearing filed after the term at which the decree had been entered, and that therefore under Equity Rule 69, no rehearing could be granted; and also for the reason that the evidence, as disclosed by the supporting affidavits, was merely cumulative and would not alter the original findings of the court in the matter of infringement.

## designing DOORSEALS



no one  
knows  
rubber like  
**MILLER**

THE young electric refrigerator industry, like all other infant industries, made some mistakes in its first models.

But doorseal, from the very beginning, did a good job, and we are proud of the fact that we were able to help.

Engineers asked us to collaborate in the early days—and they still ask our advice—because we have had so many years of experience in the design and manufacture of every conceivable type of rubber article.

Perhaps we can better the shapes, strengthen the insulating properties in your doorseal and make it easier to apply. Address, The Miller Rubber Products Co., (Inc.), Akron, Ohio

### DOUBLY INSURED PROTECTION

FITTINGS used by the automatic refrigeration industry in the assembly of their units must give protection against leakage of refrigerants.

Manufacturers have found, over a period of 18 years, that the inclusion of Commonwealth Brass Seepage-Proof Fittings in automatic refrigeration assemblies is positive insurance against leakage.

To further insure against such accidents the seats of all Commonwealth Brass fittings are protected in shipment by cardboard ferrules and reach the assembler without mars or nicks, ready for installation.

Insure your units against leakage by using Commonwealth Brass Seepage-Proof Fittings—Built Right—To Stay Tight.

COMMONWEALTH BRASS CORPORATION  
COMMONWEALTH AT G. T. R. R.  
DETROIT - MICHIGAN

Send for our catalog  
No. 36 fully descriptive of our line of fittings carried in stock.

## French Copper Tubes

in all sizes, gauges and lengths



There are French Copper Refrigeration Tubes... small diameter and thin wall seamless tubes... for every refrigeration requirement. Stock sizes are 1/4 in., 3/8 in., 7/16 in., 1/2 in., 5/8 in. and 3/4 in., all in .035 gauge. Heavier gauges can be made to order. Stock coils are 25, 50 and 100 ft. long. Other lengths can be supplied on short notice. Additional information on request. The French Manufacturing Company, General Offices: Waterbury, Connecticut.

## FRENCH REFRIGERATION TUBES

## LITERATURE OF MANUFACTURERS

Catalogues, bulletins and descriptive leaflets recently issued. Manufacturers are requested to send copies of new trade literature to Electric Refrigeration News.

### American Blower Air Conditioners

The American Blower Corp. has issued its "Green Book," a 24-page brochure designed for prospective air conditioning distributors or dealers. Illustrations are in rotogravure and color-gravure. The book points to American Blower Corp.'s 50 years of experience in the manufacture of heating, ventilating, and air handling equipment. A discussion of the market and detailed information on the sale of the Sirocco conditioner are given. The nation-wide American Blower organization is mentioned, and a list of seven profit possibilities is included. Plans for national and trade advertising by the company are outlined, and other sales helps pointed out.

### Seeger Cabinets

New literature advertising Seeger household cabinets has been issued by Seeger Refrigerator Co. The folder is in attractive spring colors, and is headed "Something New for 1932." The continuous "piano hinge" is now incorporated in Seeger medium-priced models as well as deluxe models, the literature points out. The inside of the folder shows six models (three all-porcelain and three with lacquer exteriors) and gives full specifications for them. Other similar folders were issued on apartment house and deluxe models.

### American Air Filters

"American Air Filters in Industry" is the title of a 25-page brochure just issued by the American Air Filter Co., Inc. The uses of air filters for atmospheric dust control, in industrial air conditioning, for industrial ventilation, for drying operations, in product finishing, for control of bacteria and mold spores, for cooling electrical equipment, for the protection of engines and compressors, and in the control of process dust are fully described, with accompanying illustrations. Photo-micrographs of various types of dust are among the interesting illustrations. The back of the booklet carries a list of distributors of the apparatus.

### Carter Products

A new catalogue of the W. R. Carter Co. contacts, sheets, and wire has been issued as of May 1, 1932. A discussion of the properties of Carter metal, a page on prices, quotations, terms, etc., and a short description of the correct method of ordering are given. List prices are given in the back of the booklet.

### Brunner Products

Specification sheets for two Brunner compressor models and three high sides have been issued by the Brunner Mfg. Co., Utica, N. Y. The units pictured and described are: compressor models S-95, and S-135; and high side models S-970, S-1020, and S-1380.

Attached to the sheets is a diagram of compressor S-135, with all parts named and all specifications given.

### G. E. Magnetic Switches

Designed to resemble the exterior of a General Electric magnetic switch case is a new booklet on switches put out by General Electric Co.

The pages inside show photographs of the various sizes of magnetic switches in the line, and list the accessories and modifications available to make the switches suit any job. The center interior spread resembles the switch case opened, and red arrows point to the various features of the switch.

### Ranco Thermostats

Automatic Reclosing Circuit Breaker Co. has issued a new bulletin, No. 610, to describe the Type F Ranco Thermostat. New dial plates are shown in full colors on one page. Sectional drawings and outstanding features of the product are shown and listed. The manner of installation and adjustment, the uses, operation, etc., are mentioned.

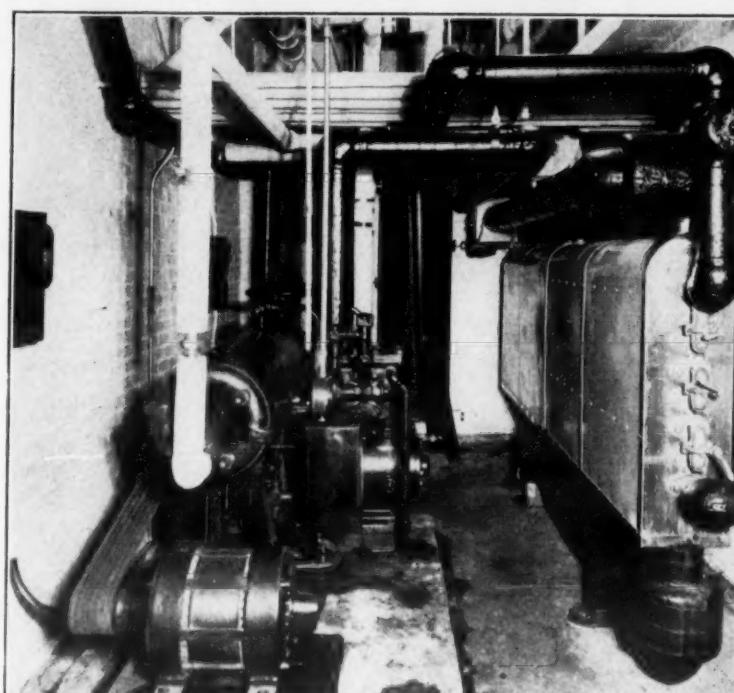
### Esco Milk Coolers

Specification and price sheets on Model "J" Esco milk coolers have been issued by Esco Cabinet Co. The model is pictured, specifications are given, and a brief description of the uses and applications of it is included. The price sheet gives net prices on model B and BI coolers, for bottled milk, model D beverage cooler, model E coolers for cans of milk, and model I ice makers, as well as for parts and supplies.

### Flintlock Heat Transfer Devices

Photographs and a design and data sheet are used in a 6-page bulletin recently put out, to illustrate Flintlock finned tubing and other heat transfer devices. Some of the products shown are refrigeration condensers, a cooling and heating surface for air conditioning, concealed radiators, automobile radiators. The Flintlock fin and tube are all one piece, with no joint to resist the flow of heat, it is pointed out.

## Completely Automatic



This installation of water cooling equipment made by the York Ice Machinery Corp., in the new Administration Bldg. of the Philadelphia Board of Education, is completely automatic and will serve 500 people per hour.

## YORK WATER COOLING SYSTEM IS INSTALLED

PHILADELPHIA—A completely automatic water cooling system has just been installed by the York Ice Machinery Corp. in the new Administration building of the Philadelphia Board of Education.

The system is installed to serve 500 persons per hour from two large marble drinking fountains on each floor, each containing a Halsey Taylor controlled stream bubbler and glass filler, according to V. L. Frank, supervisor of the commercial machine division of York's Philadelphia office, who designed the installation.

### Capacity Can Be Doubled

In compliance with directions of Barton Reutter, sanitary engineer for the Philadelphia Board of Education, the system was laid out so that it can be enlarged to accommodate double the present number of cold water outlets.

The ice water piping is of brass insulated with cork covering, and loops the building to serve the 30 drinking fountains with instantaneous ice water which is circulated at the rate of 10 gals. per minute, Mr. Frank explains.

City water is first filtered through a York water filter with a capacity of 300 gals. per hour. The water then goes through a York internal tube cooler which, designed to meet the rigid sanitary laws of the State of Pennsylvania, is made of pure stainless steel seamless tubes, encased within a 2-in. ammonia pipe.

### Details of Water Cooler

There are eight 12-ft. long pipes in the unit, all insulated with cork and encased with stainless steel metal, painted white, and set on cast-iron stands. Each tube is straight, has an inspection and cleanout door, easily opened.

The storage or reserve water is contained in a York 100-gal. pressure tank made of stainless steel metal and of welded construction.

The compressor unit is a York 3x3-in. double-cylinder, slow-speed, heavy-duty, self-contained unit, driven by a 5-hp. motor.

The refrigerant is fed and controlled by the York gravity feed system with controls to prevent freezing. The circulating pumps are entirely automatic, being operated by a General Electric Telechron clock switch, which alternates the pumps every 12 hours with shut-down.

## NEW SPRAY-HEAD DESIGNED FOR APPLYING PORCELAIN

TOLEDO—A new type of spray-head assembly for applying porcelain finishes to electric refrigerator cabinets has just been designed by the DeVilbiss Co. here.

This new device consists of spray head, air cap, fluid tip and fluid needle for a DeVilbiss type AV gun.

The fluid tip and needle are of Nitrilloy to provide protection against the abrasive action of vitreous materials. The combination of features in this assembly results in an even, well-atomized spray, free from spatter or overspray, about 9 in. wide, when the gun is held 10 to 12 in. from the work, its designers claim.

The new spray head combination is available in several different nozzle sizes to provide for the requirements of the various types of porcelain finishing materials.

## SERVICE HINTS

By FRANK W. GRAY

In some sections of the country there seems to be an electrolytic action in the water, which causes leaks to develop in thin-walled tanks or tubing. In one certain city the condensers of water-cooled machines repeatedly sprung bad leaks. The leaks developed quickly through the face of the metal, much as though the hole had been eaten through by acid.

There seems to be no reliable way to overcome such electrolysis, other than simply to provide heavier pipes and connections. Where such electrolytic action is prevalent, extra heavy iron or brass pipes to carry the flow of water should be used in condenser construction.

### Pulling Tubing Through Conduit

The job mentioned in the first paragraph above calls to mind the fact that it is poor installation judgment to pull copper tubing through conduit that is barely large enough to take it, or to pull several lengths of tubing through the same conduit in a multiple job.

In case a service call makes necessary the removal of tubing from the job, the conduit should be of such size as to permit easy withdrawal—particularly if the conduit is placed within the walls.

When several lengths of tubing are drawn into the same large conduit they tend to weave together, making it nearly impossible to withdraw one or two lengths of tubing separate from the others. Separate conduit risers for each system mean economy of effort in case reinstallation of part of the tubing is necessary.

### Frosting of Display Glass

The question has often been brought up: What causes the fog of moisture to appear between the panes of triple and

quadruple glass showcases? This condensation of moisture is caused by the contact of cold from within and the warmth from without, bringing about a precipitation of moisture in the air between the glasses as it contracts and expands.

### Air Expands and Contracts

Air invariably contains a certain amount of moisture, and although some showcase manufacturers have sought to prevent this fogging of the plate glass by sealing the edges of the panes against air leakage, thus creating a dead air space between them, even this seal cannot prevent expansion and contraction of the air between the glasses, and the precipitation of the moisture contained in that air.

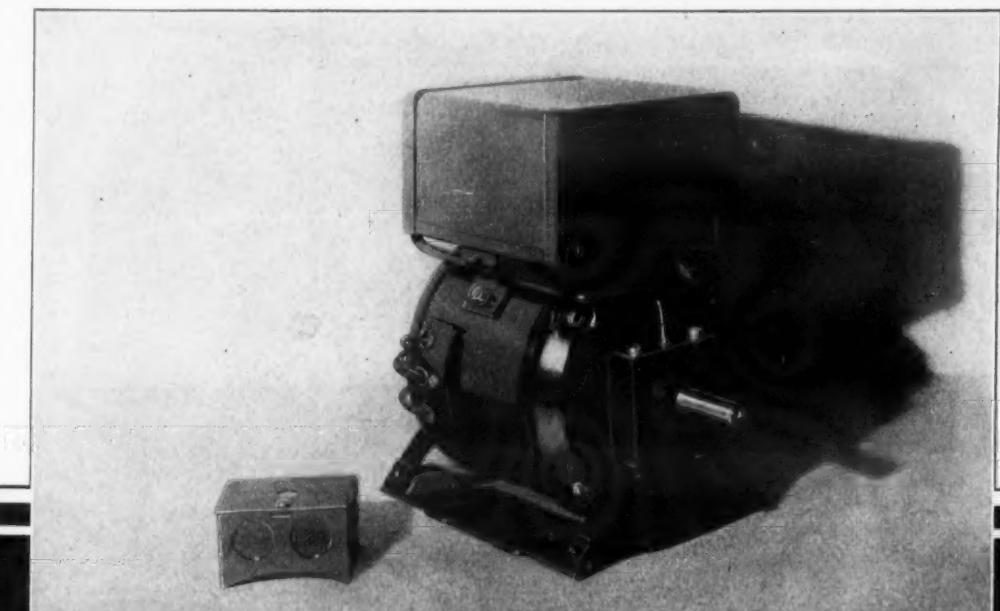
One very effective way of preventing fogging between the glasses of showcases is used by Cochran and St. John, commercial refrigeration dealer of San Francisco.

### Calcium Chloride Drier

This company, manufacturing display counters in a limited way, installs a shallow tray in the bottom of the case, just below the bottom edges of the glass plates, holes being bored to facilitate the passage of the air between the glass to this tray.

The tray is filled with powdered calcium chloride, and may be withdrawn for refilling if saturation ever takes place.

The calcium chloride effectively absorbs the moisture from the dead air spaces, preventing any condensation between the glasses. The tray need not be refilled except at considerable intervals of time.



## What do your customers care about MOTORS!

● Your customers buy refrigeration. They can't be expected to weigh the relative worth of this motor design against that—one make against another.

But whether they get the quality of refrigeration they expect is largely dependent on motor performance. No refrigerator is more dependable than the motor that gives it power.

That's why Westinghouse set aside old ideas and prejudices,

and engineered, designed and built a new motor especially for electric refrigerators.

Every detail of the Westinghouse high torque capacitor-motor was judged as a contribution to trouble-free, silent, refrigerator service . . . power that could be depended upon to keep running year after year at the lowest possible cost to manufacturer and user.

The coupon will bring you complete information.

# Westinghouse

Quality workmanship guarantees every Westinghouse product



### MAIL THE COUPON

Westinghouse Electric & Manufacturing Company  
Appliance Electrification Division, East Springfield, Mass.

Please send complete information on the new Westinghouse Type FT High-Torque Two-Value Capacitor Motor designed especially for refrigerators.

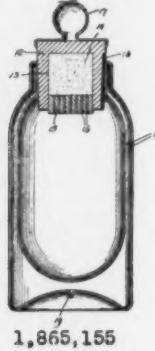
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## REVIEW OF LATEST PATENTS GRANTED

(Continued from Last Issue)

1,865,155. REFRIGERATING DEVICE. Miner P. Wetmore, Norwich, Conn., assignor to The American Thermos Bottle Company, Norwich, Conn., a Corporation of Ohio. Filed March 12, 1928. Serial No. 261,018. 10 Claims. (Cl. 62-91.5.)



1,865,155

1. A heat-insulated receptacle having a hollow cork stopper adapted to hold a refrigerant in the form of solidified gas, and means permitting the gradual escape of gas from the stopper into the receptacle.

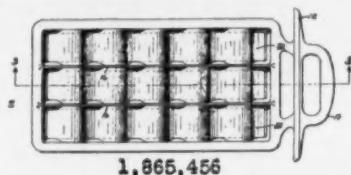
1,865,168. REFRIGERATING METHOD AND APPARATUS. Victor Buhr, Larchmont, N. Y., assignor to Equity Construction Company, Inc., New York, N. Y., a Corporation of New Jersey. Filed March 25, 1930. Serial No. 438,679. 9 Claims. (Cl. 62-104.)

1. The method of hardening a semi-frozen product which comprises passing the product through a refrigerating chamber and while the product is within the chamber directly impinging against opposite sides of the product separate streams of a gaseous cooling medium under pressure, and permitting such gaseous medium to expand,

whereby the temperature of the product is substantially reduced.

ISSUED JULY 5, 1932

1,865,456. FREEZING TRAY. Ralph H. Chilton, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a Corporation of Delaware. Filed Sept. 20, 1930. Serial No. 483,225. 4 Claims. (Cl. 62-108.5.)



1,865,456

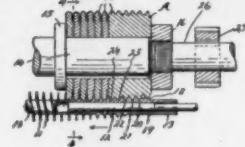
1. A freezing tray adapted to be inserted within a freezing chamber comprising: a molded flexible rubber container having a plurality of elongated pockets therein formed of flexible rubber, and a removable sinuous flexible metal band fitting within each pocket with the edges of said band contacting with the side walls of said pocket and forming a plurality of separate ice blocks in each pocket, said band and associated ice blocks in each pocket being removable bodily from said container by flexing the rubber walls of said pocket.

1,865,513. REFRIGERATING APPARATUS. Richard S. Gaugler, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed Nov. 29, 1930. Serial No. 499,046. 8 Claims. (Cl. 62-95.)

1. A refrigerating system including a closed circuit including a portion in contact with a cold medium and an evaporator, said system containing a refrigerant and an inert gas, and means for varying the volume of the system at will.

1,865,575. APPARATUS FOR MANUFAC-

TURING INTEGRAL FINNED TUBING. Arthur A. Locke, Detroit, Mich., assignor to Wolverine Tube Co., Detroit, Mich., a Corporation of Michigan. Filed Nov. 30, 1928. Serial No. 322,914. 7 Claims. (Cl. 80-13.)



1,865,575

7. An apparatus for forming helical finned tubing comprising means for supporting a plain tube, a plurality of forming rolls each comprising a series of dies which intersect the outer cross-section of said tube, means for relatively rotating said tube and forming rolls and simultaneously axially feeding one with respect to the other, each forming tool comprising means for initially forming a helical groove in the outer periphery of the tube and for subsequently progressively squeezing the metal between the convolutions of the helical groove to reduce the thickness and increase the radial dimensions thereof.

1,865,582. ICE BOX CANDY RACK. Earl H. Nusbaum, Fort Wayne, Ind. Filed April 17, 1931. Serial No. 530,930. 1 Claim. (Cl. 211-133.)

1. A rack comprising rear and side walls, each including a plurality of relatively spaced elongated loop shaped members, substantially rectangular shaped frames fixed to the members to hold them assembled and forming connections between said walls, bars fixed to each of said frames and relatively spaced and cooperating therewith to provide shelves confined within the walls, a substantially U-shaped handle extending across the upper edge of the side walls and engaging a loop shaped member of each side wall, and headed fasteners carried by the handle and extending through the last mentioned loop shaped members to pivotally and slidably connect the handle to the side walls.

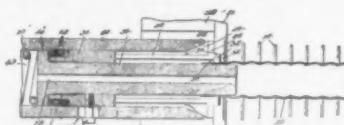
1,865,605. HUMIDIFYING APPARATUS FOR SPACE HEATERS. Fred M. Young, Racine, Wis. Filed Dec. 17, 1930. Serial No. 503,002. 5 Claims. (Cl. 261-15.)

1. An air conditioning device comprising means for impelling a current of air, a fluid reservoir comprising a restricted outlet for injecting moisture under pressure into said current of air, and automatic regulating means in said outlet for varying the amount of moisture injected in proportion to the quantity of air impelled and its moisture absorbing capacity for maintaining the surrounding air at a substantially constant relative humidity.

1,865,614. VACUUM COOLER. Harold B. Caldwell, Mount Vernon, N. Y., assignor to Swenson Evaporator Co., Harvey, Ill., a Corporation of Illinois. Filed Aug. 16, 1928. Serial No. 299,955. 2 Claims. (Cl. 62-152.)

1. The method of crystallizing the solute of a liquid solution by cooling the liquid by means of a cooling medium that is not cool enough directly to effect the cooling, which consists in subjecting the liquid to a reduced pressure to extract vapor therefrom and thereby cool the same, compressing the vapors to a pressure that raises their temperature above the temperature of the cooling medium, and subjecting the compressed vapors to the cooling action of the cooling medium.

1,865,678. APPARATUS FOR PRODUCTION OF BELLows TUBING. Walter B. Clifford, Cambridge, Mass., assignor to Clifford Mfg. Co., Boston, Mass., a Corporation of Delaware. Filed Aug. 13, 1928. Serial No. 299,163. 13 Claims. (Cl. 153-73.)



1,865,678

4. Apparatus for the production of bellows tubing comprising a die assembly, a sleeve, a clutch assembly comprising inner and outer clutching members supported within the sleeve, means for normally maintaining the clutch assembly in advanced position, and means for relatively moving the inner and outer members into clutching position upon a rearward movement of the clutch assembly due to engagement with the die assembly.

1,865,761. SHOW-CASE REFRIGERATOR. Theodore A. Jostedt, St. Louis, Mo., assignor, by mesne assignments, to Hussmann-Ligonier Co., St. Louis, Mo., a Corporation of Delaware. Filed Jan. 16, 1928. Serial No. 247,010. 3 Claims. (Cl. 62-89.6.)

1. A showcase refrigerator, comprising, an elongated showcase compartment having transparent panels along the front thereof and having an inclined door at the back thereof provided with a transparent panel, a refrigerating coil extending along the top of said compartment, and baffles extending along said compartment below said coil and along the sides thereof constructed and arranged to provide top passages over the sides of said baffles and a bottom passage along the bottom thereof, one of said baffles extending below the inner edge of the other and having a gutter adapted to receive the drip from said first baffle, said coil and baffles being adapted and positioned to cause currents of air to circulate in paths from said bottom passage downwardly into said compartment and in return paths upwardly along said panels and into said top passages.

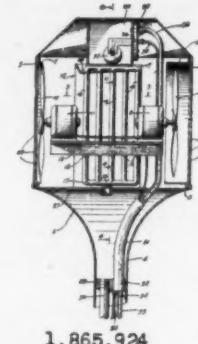
1,865,775. WATER DISTRIBUTOR FOR CONDENSERS OF ICE MANUFACTURING SYSTEMS. Joseph A. Martocello, Sr., Philadelphia, Pa. Filed Aug. 27, 1931. Serial No. 559,652. 16 Claims. (Cl. 62-257-178.)

1,865,813. METHOD OF AND APPARATUS FOR PRODUCING CONTINUOUS REFRIGERATION. Earl Babcock, Chicago, Ill., assignor to The Hoover Co., North Canton, Ohio, a Corporation of Ohio. Filed June 28,

1930. Serial No. 464,453. 11 Claims. (Cl. 62-119.5.)

1. In a refrigerating apparatus adapted to produce cooling effect by the simultaneous evaporation of two refrigerants, absorption means wherein both refrigerants may be changed from gaseous phases to more dense phases and separated by gravity action upon them, a boiler for each refrigerant, means for conducting the refrigerants from said absorption means to their respective boilers and a single source of heat for vaporizing both refrigerants in their respective boilers.

1,865,924. COOLING EVAPORATOR. Richard W. Kritzer, Chicago, Ill., assignor to Peerless Ice Machine Co., Chicago, Ill. Filed Aug. 11, 1930. Serial No. 474,438. 2 Claims. (Cl. 62-130.)



1,865,924

2. An apparatus for forming helical finned tubing comprising means for supporting a plain tube, a plurality of forming rolls each comprising a series of dies which intersect the outer cross-section of said tube, means for relatively rotating said tube and forming rolls and simultaneously axially feeding one with respect to the other, each forming tool comprising means for initially forming a helical groove in the outer periphery of the tube and for subsequently progressively squeezing the metal between the convolutions of the helical groove to reduce the thickness and increase the radial dimensions thereof.

1,865,981. AIR CONDITIONING UNIT. Reuben N. Trane, La Crosse, Wis. Filed July 6, 1931. Serial No. 549,079. 3 Claims. (Cl. 236-38.)

1. A heating and ventilating unit having a casing divided into an air inlet chamber, a blower chamber, a heater chamber and a discharge chamber, a recirculated air inlet and a fresh air inlet, and means for mixing the fresh air and recirculated air before entering the blower, an extended surface heater in said heating chamber and a thermostatic valve responsive to the temperature of the mixed air before such air enters the heater proportionately controlling the flow of heating fluid to said heater in relation to the different temperatures of such air.

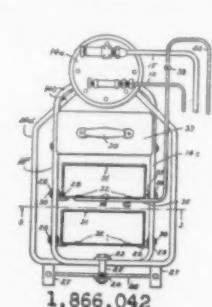
1,866,085. REFRIGERATOR CAR. Louis L. Cohen, Highland Park, Ill., assignor to Equipment Specialists Co., Chicago, Ill., a Corporation of Illinois. Filed Nov. 22, 1930. Serial No. 497,374. 8 Claims. (Cl. 62-15.)

1. In a refrigerator car, the combination of an enclosure comprising floor, walls and ceiling with a bulkhead extending longitudinally of said car and spaced from the wall thereof to form an ice chamber, said bulkhead comprising a plurality of sheet metal members having laterally projecting flanges secured together, and an ice grating in said ice chamber, and extending longitudinally of said car, said ice grating comprising perforated metal sheets secured to said bulkhead and the adjacent wall.

1,866,040. REFRIGERATING APPARATUS. Lester S. Keilholtz, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corp., a Corporation of Delaware. Filed Dec. 31, 1923. Serial No. 683,589. 12 Claims. (Cl. 217-17.)

8. A mechanically cooled portable refrigerator having an insulated compartment, said compartment comprising an inner lining, an outer surrounding wall, an interposed insulating layer adjacent to but spaced from at least one of said walls, and providing a space for a filling and filling in said space, said filling being of a material adapted for insertion therein in a substantially liquid state.

1,866,042. REFRIGERATING APPARATUS. Jesse G. King, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corp., a Corporation of Delaware. Filed Oct. 23, 1923. Serial No. 670,359. 7 Claims. (Cl. 62-3.)



1,866,042

1. A refrigerator, comprising in combination, a cabinet, a cooling unit within the cabinet, means for circulating a refrigerating medium through said unit, a chamber for substance to be cooled within said unit, and a thermostat for controlling said means secured to the underside of a wall of said chamber, said thermostat having a substantial portion of its body attached in good heat conducting relation to said chamber whereby the thermostat is responsive to the temperature of the substance to be cooled and to the temperature of the unit.

1,866,388. REFRIGERATING DEVICE. Otto Bahns, Long Island City, N. Y. Filed Jan. 24, 1929. Serial No. 334,738. 3 Claims. (Cl. 62-75.)

1. A refrigerating device including an elongated body structure having a relatively narrow longitudinally extending bar at the top thereof and angular closure members hinged to opposite edges of said bar and each having a top part and side part, a relatively narrow longitudinally extending refrigerant receiving chamber wholly positioned within the plane of said central top bar of the body structure and of uniform dimensions throughout its depth, refrigerant supporting means substantially closing the lower end of said chamber, a second chamber disposed within said body structure and substantially enclosing said first named chamber, the corresponding walls of said chambers being spaced apart, and the space between said walls adapted to receive a residual of the refrigerant in the first named chamber.

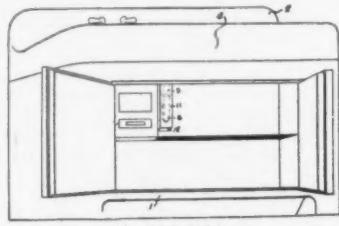
1,866,192. CARBONATING CYLINDER AND SYSTEM FOR USE OF SOLID CO<sub>2</sub>. William T. Comer, Atlanta, Ga., assignor to Crystal Carbolic Laboratory, Atlanta, Ga., a Corporation of Georgia. Filed Jan. 18, 1930. Serial No. 421,856. 5 Claims. (Cl. 62-91.5.)

1. A pressure cylinder for carbonators comprising, in combination, a cylinder for reception of solid CO<sub>2</sub>, a cap for said cylinder, screw means revolvably connected to said cap, said means acting to press said cap into gas-tight contact with said cylinder and to move said cap into spaced relation to said cylinder in accordance with its direction of revolution.

1,866,373. REFRIGERATING APPARATUS. Harry F. Smith, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed Sept. 30, 1929. Serial No. 396,230. 3 Claims. (Cl. 62-5.)

1. Apparatus of the character described comprising a normally closed pressure responsive actuator, means for reducing the pressure within the actuator including an orifice and means for discharging a jet of liquid into the orifice, and means for insuring continuous contact between the jet and a wall of the orifice including means responsive to a predetermined low pressure within the actuator for admitting gas to contact with the jet.

1,866,435. REFRIGERATOR. Carl M. Weinheimer, Buffalo, N. Y. Filed July 19, 1930. Serial No. 469,182. 5 Claims. (Cl. 62-89.)



1,866,435

1. In a refrigerator casing adapted to be placed beneath a sink, and having a waste pipe therein through which the projecting waste pipe extends into the refrigerator casing, a casing surrounding such projecting portion of the waste pipe and detachably secured to the refrigerator casing, and members extending from the casing surrounding the waste pipe into the slot in the refrigerator casing.

1,866,443. SCRUBBING AND ABSORBING APPARATUS. Frank R. Zumbro, Waynesboro, Pa., assignor to Frick Co., Waynesboro, Pa., a Corporation of Pennsylvania. Filed Jan. 19, 1929. Serial No. 333,560. 4 Claims. (Cl. 261-108.)

1. In a system for recovering carbon dioxide gas from a mixture of furnace gases, a scrubbing unit comprising an upright tower having an inlet for the furnace gases near its lower end with means for forcing said furnace gases under pressure into said tower, an inlet for water and an outlet, the said outlet being positioned somewhat above the bottom of the tank, the level of the water being positioned above the uppermost portion of the inlet for gases, a series of inverted cone-shaped perforated baffle plates positioned in the upper portion of the tank, an inlet for water extending down through the baffle plates and terminating in a plurality of spray nozzles, substantially as set forth.

1,866,466. CABINET COOLER. Louis W. Hassensall, Toledo, Ohio. Filed Nov. 7, 1929. Serial No. 405,439. 1 Claim. (Cl. 62-143.)

In a water cooler, a cabinet having a wall formed with an opening for access to the interior of the cabinet, the upper portion of the cabinet being set back to provide a ledge and the ledge being formed with an opening and about the opening being recessed to form a seat bordering the opening, a drain pan fitting in said opening and having a bottom and upstanding walls, the bottom being disposed at an incline at one end and having its lower end portion formed with an opening, the walls having outstanding flanges along their upper edges engaged in the seat about the opening to suspend the pan, a receptacle in said cabinet beneath the opening of said pan, and a cooling chamber resting upon the top of said cabinet and having an outlet extending over said pan.

TRADEMARKS

ZEROLATOR

Ser. No. 327,356. General Water Heater Corp., Los Angeles, Calif. Filed May 23, 1932. For Electric Refrigerators. Claims use since May 3, 1932.

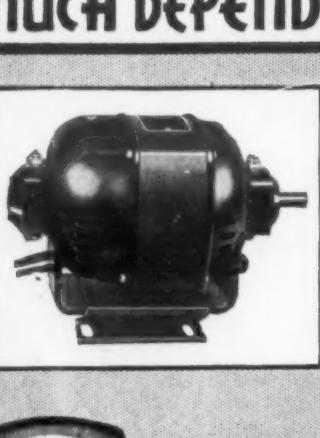
ISSUED JULY 12, 1932

1,866,526. REFRIGERATING APPARATUS. Ransom W. Davenport, Detroit, Mich., assignor to Chicago Pneumatic Tool Co., New York, N. Y., a Corporation of New Jersey. Filed Feb. 7, 1928. Serial No. 252,447. 12 Claims. (Cl. 62-127.)

1. A refrigerating system comprising an evaporator, a compressor, and a condenser

(Continued on Page 7, Column 1)

MUCH DEPENDS UPON THE MOTOR



Sturdy, dependable and long-lived—yes.

More than just that—also quiet in operation due to a

simple brush-lifting mechanism that eliminates brush noise—

special cradle mounting that prevents transmission of vibration to the base.

Other features contributing to the success of this motor for refrigeration needs covered in detail in Bulletin No. 28. Copy upon request.

The Leland Electric Co., Dayton, Ohio, U. S. A.

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Leland Motors

